REPORT RESUMES

ED 003 789 64

CUE (CULTURE, UNDERSTANDING, ENRICHMENT)--INDUSTRIAL ARTS.

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NEW YORK STATE EDUCATION DEPARTMENT, ALBANY

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THIS PUBLICATION IS A TEACHING GUIDE TO PROVIDE GUIDANCE FOR INTEGRATING CAREFULLY SELECTED AUDIOVISUAL ITEMS INTO EXISTING NINTH-GRADE CURRICULUMS IN INDUSTRIAL ARTS. IT IS ONE OF FIVE GUIDES PREPARED FOR USE IN PROJECT CUE, AN EXPERIMENTAL PROGRAM DESIGNED TO INCREASE CULTURAL UNDERSTANDING AND ENRICHMENT IN THE EDUCATIONAL PROGRAMS OF HIGH SCHOOLS. THE AUDIOVISUAL MEDIA INTRODUCED BY THIS GUIDE ARE PERTINENT TO SUCH INDUSTRIAL ARTS TOPICS AS (1) ARCHITECTURE AND CONSTRUCTION, (2) CERAMICS, (3) GRAPHIC ARTS, (4) INDUSTRIAL DESIGN, (5) TEXTILE ARTS, (6) METALWORKING, (7) WOODWORKING, AND (8) PHOTOGRAPHY. THE ACTUAL TYPES OF MEDIA TO BE USED INCLUDE FILMS, FILMSTRIPS, SLIDES, FLAT PICTURES, AND DRAWINGS. EACH AUDIOVISUAL AID INTRODUCED IN THE GUIDE IS INDIVIDUALLY TITLED (FOR EXAMPLE--"ARCHITECTURE IN FRANCE FROM THE ROMANS TO TODAY," A SERIES OF SLIDES), AND PROCEDURES ARE DESCRIBED FOR THE USE OF EACH AID. THE AIDS ARE TO BE TREATED AS LESSON SUPPLEMENTS AND USED ONLY FOR INSTRUCTIONAL ENRICHMENT. (REFER TO ED 003 785 THROUGH ED 003 792 FOR THE COMPLETE SERIES OF PROJECT CUE TEACHING MATERIALS.) (JH)

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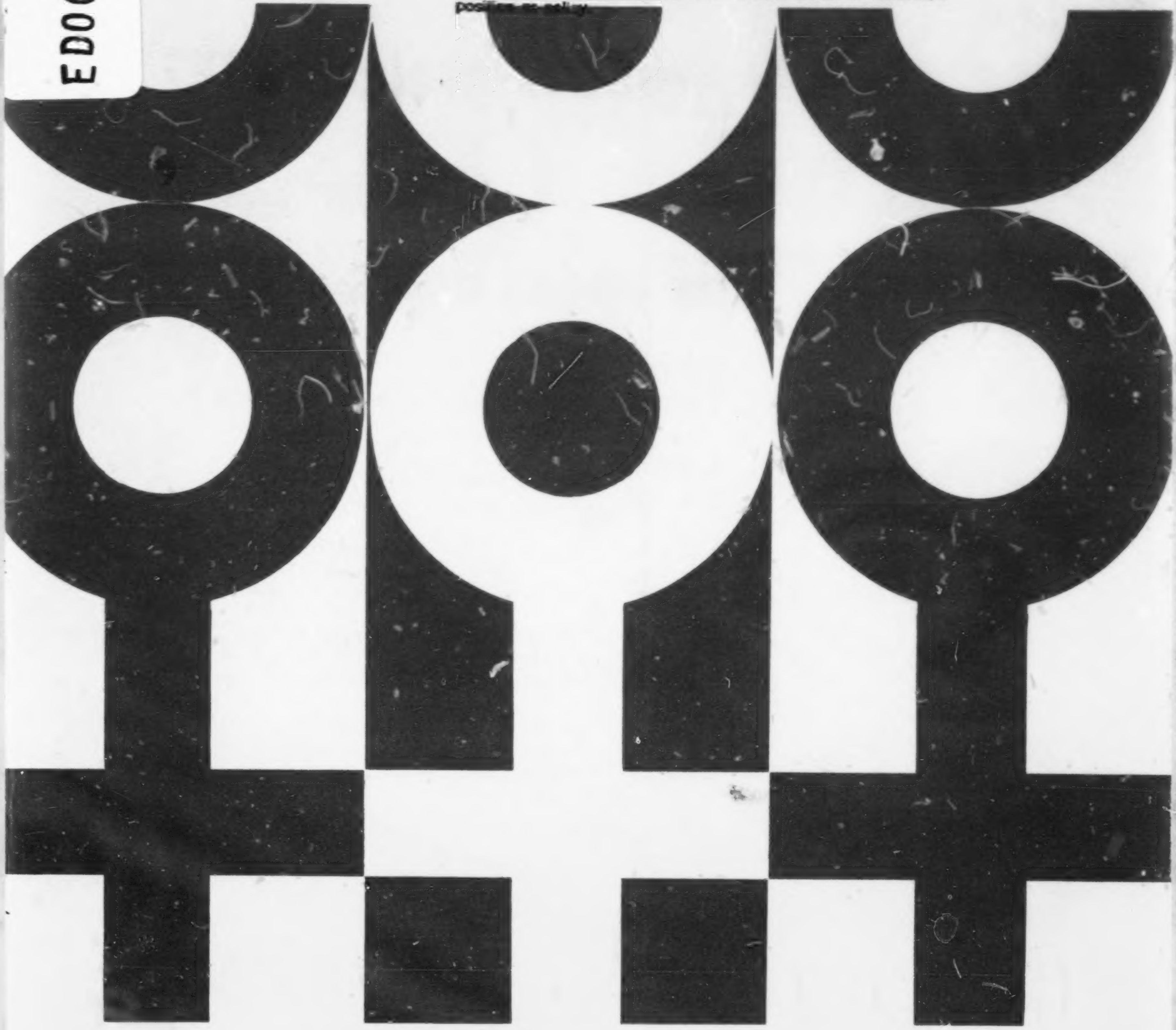

INDUSTRIAL ARTS

CUE

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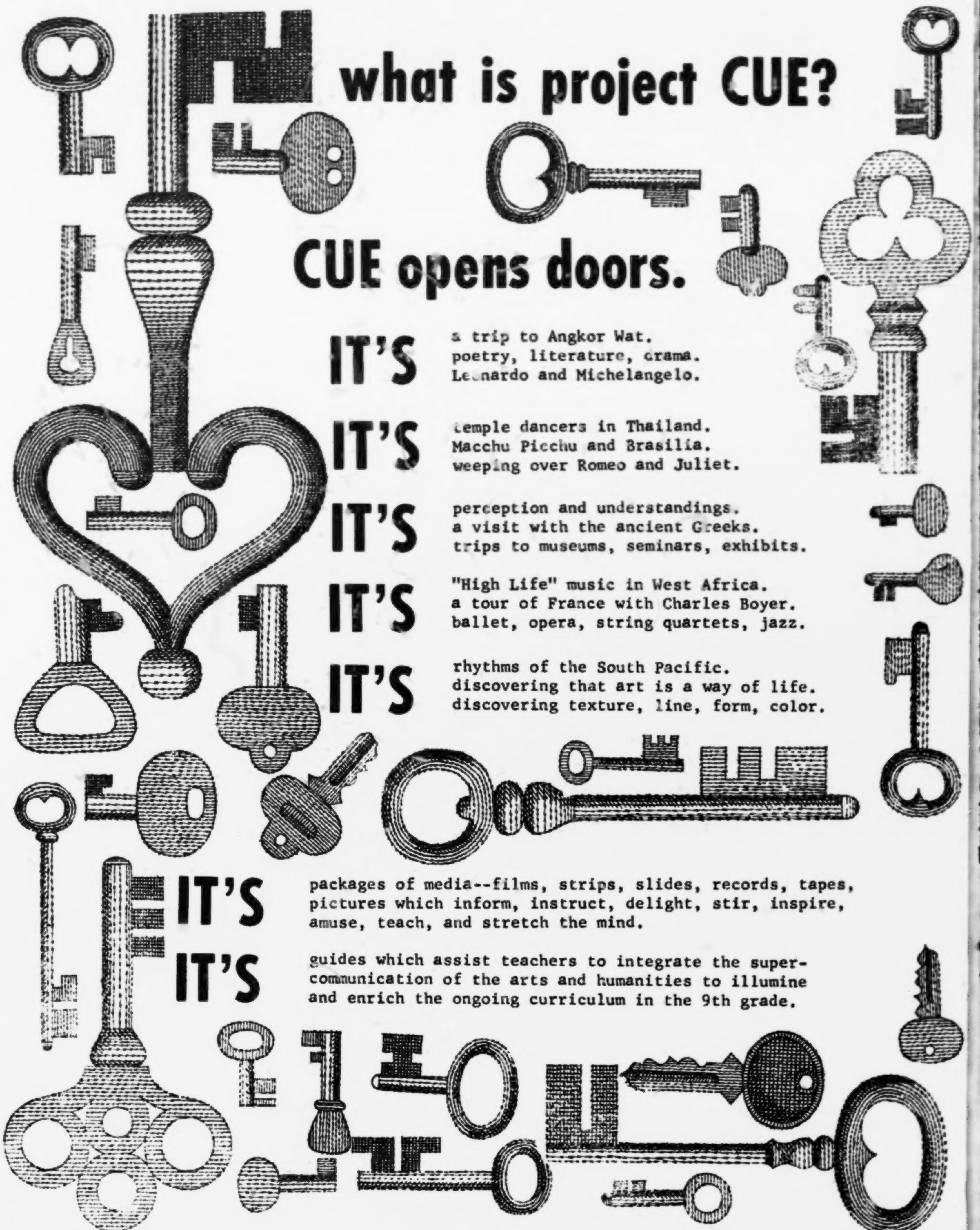

what is project CUE?

CUE opens doors.

IT'S a trip to Angkor Wat.
poetry, literature, drama.
Leonardo and Michelangelo.

IT'S temple dancers in Thailand.
Macchu Picchu and Brasilia.
weeping over Romeo and Juliet.

IT'S perception and understandings.
a visit with the ancient Greeks.
trips to museums, seminars, exhibits.

IT'S "High Life" music in West Africa.
a tour of France with Charles Boyer.
ballet, opera, string quartets, jazz.

IT'S rhythms of the South Pacific.
discovering that art is a way of life.
discovering texture, line, form, color.

IT'S packages of media--films, strips, slides, records, tapes, pictures which inform, instruct, delight, stir, inspire, amuse, teach, and stretch the mind.

IT'S guides which assist teachers to integrate the super-communication of the arts and humanities to illumine and enrich the ongoing curriculum in the 9th grade.

"TO SEE LIFE; TO SEE THE WORLD; TO EYEWITNESS GREAT EVENTS; TO WATCH THE FACES OF THE POOR AND THE GESTURES OF THE PROUD; TO SEE STRANGE THINGS--MACHINES, ARMIES, MULTITUDES, SHADOWS IN THE JUNGLE AND ON THE MOON; TO SEE MAN'S WORK--HIS PAINTINGS, TOWERS AND DISCOVERIES; TO SEE THINGS THOUSANDS OF MILES AWAY, THINGS HIDDEN BEHIND WALLS AND WITHIN ROOMS, THINGS DANGEROUS TO COME TO; THE WOMEN THAT MEN LOVE AND MANY CHILDREN; TO SEE AND TO TAKE PLEASURE IN SEEING; TO SEE AND BE AMAZED; TO SEE AND BE INSTRUCTED; THUS TO SEE, AND TO BE SHOWN, IS NOW THE WILL AND NEW EXPECTANCY OF HALF MANKIND." *LIFE

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY 1964

V358-Ag64-1,000

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FOREWORD

Two recent trends in education met in an exciting study, known as Project CUE, culture, understanding, enrichment. The first trend was the growing recognition on the part of educators and laymen, for doing a better job of teaching the arts, the humanities, in the public schools. The second trend recognized the potential impact of a well organized "system" of instruction to support the teacher in his day-to-day teaching.

The combination of these two ideas prompted the United States Office of Education to give the New York State Education Department a grant to integrate the arts into the curriculum through the technique of a carefully planned system of instruction, based upon media-materials, curriculum guides, and suggested methodology and techniques for implementing the program. The Division of Educational Communications and the Bureau of Secondary Curriculum were assigned the task of operating the project under the directorship of Dr. Robert Brown and Mrs. Grace N. Lacy.

Although the teaching of the humanities has been taking place in many schools in the country for many years, the study being made by the Education Department represented several different approaches. First, it was decided that the humanities were for all students and not just for a select few, who chose to elect a special humanities course at a particular grade level. Second, the humanities are part of all subject area content and should be recognized and appreciated in that context. Third, a carefully prepared program of media, materials and methodology could enable the teacher and student to teach and learn in a superior way. With these three points in mind, 13 experimental schools were selected to integrate the humanities program into the ninth grade curriculum.

In July, 1963, nine teacher consultants came to Albany to select the materials suitable to their subject areas. They then wrote lesson plans for use of the materials, under the direction of Mrs. Lacy. The lesson plans were edited by the Bureau of Secondary Curriculum and the assigned subject matter specialists, published, and sent to the 13 project schools. Packages of the chosen materials were assembled and sent to the schools by the Division of Educational Communications.

Mrs. Lacy visited all schools to orient the teachers to the program and explain the CUE system. Curriculum and audiovisual coordinators in each school acted as liason persons between the school and the CUE staff. Throughout the year the materials and guides were used and evaluated by the CUE teachers. As a result of one year's use, the materials and guides have been revised and upgraded in the light of the criticisms and suggestions of more than 250 teachers. Dr. Brown conducted testing in all schools before and after the cultural material had been used.

Special acknowledgement should be expressed to each individual who participated in Project CUE. Since this is impossible, due to the large numbers that have contributed to the effort, the Department can only recognize in a general way, the help given by the United States Office of Education; the National Art Gallery; the teachers, coordinators and administrators in the thirteen project schools; the special writers and subject area supervisors; the staff of the Division of Educational Communications and the Bureau of Secondary Curriculum; and the manufacturers and producers of the media-materials used.

Lee E. Campion
Director, Division of
Educational Communications

Hugh M. Flick
Associate Commissioner for
Cultural Education and
Special Services

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INTRODUCTION

In recent post-Sputnik years, there has been little time in the schools for the humanities. So many people seemed dedicated to the proposition that science was the answer to all their problems, that billions were spent on experiment and education in the sciences and almost nothing at all for the humanities. The thought seemed to prevail - Rembrandt and Shakespeare - what good are they? They can't put a man on the moon or money in the bank. Because science has solved so many problems, people think it can solve all problems even the social ones. Scientific solutions to human problems sound wonderful on paper but they too often lack realism. They fail to take into account human passions, prejudices, greed, fears, traditional and political realities.

We spend billions to get to the moon; and yet, we do not know how to help the thousands of persons who die agonizingly of cancer each year.

We spend hundreds of thousands to find the half life of an obscure atom, yet we cannot cure the common cold.

We test nuclear bombs to keep ahead of the Russians and expose our children to genetic deterioration.

Modern chemistry helps us raise so much food farmers are paid for not growing crops - yet, millions die of starvation annually. We spend untold sums on research in automation to put people out of work - we then spend more to keep them on relief or give them psychiatric care.

Science promises the abundant life and this we want but we need something more - we need to learn how to live the good and satisfying life - and this we can learn from the arts and the humanities.

The total measure of man must be more than scientific precision. Science gives us knowledge and power of action. It tells us what we can do - the humanities tell us what we ought to do. We must have a knowledge of science if we are to live - a knowledge of the humanities if we are to live well. The arts and humanities are less a sum of knowledge than a way of thinking and being which helps us mature, gives us values and adds new dimensions to our beings. Great scientists realize there is no dichotomy between art and science. Both artist and scientist are studying nature in their own way to give new insights to man. Forward looking educators realize that instead of stressing the memorization of facts, we need streamlined courses which are thorough in their integration of important principles and more than surface deep in their provision for education in the process of making judgments, forming values and learning to think.

Many people are beginning to think that the arts are forms of super-communication around which we can group many studies. The reason for this is - the more complicated the truth, and there are some very complicated ones around today - the more likely it is to be grasped by an experience with one of the poems or paintings or compositions of music which speak to us through the eyes, the ears, and the heart to strike responsive chords in us to help us understand the great ideas and principles of man.

Much learning goes on at a nonverbal and emotional level. Many people feel that from a study of the arts and humanities will come a knowledge of the values which have stood the test of time and which give men convictions and the courage to stand by and for them. This conviction has grown so great that the Council of Learned Societies has published a report on the Humanities. Below are excerpts from this important report which requests the establishment of a National Foundation for the Humanities. The report urges expansion and improvement of activities in the arts and humanities for the good of the national interest.

National Report of

THE COMMISSION ON THE HUMANITIES - 1964

> "In the eyes of posterity, the success of the United States as a civilized society will be largely judged by the creative activities of its citizens in art, architecture, literature, music and the sciences."
>
> The President's Commission on National Goals.

The humanities have played an essential role in forming, preserving and transforming the social, moral and esthetic values of every man of every age. The humanities are a body of knowledge usually taken to include the study of history literature, the arts, religion and philosophy. These studies are essential in education for the growth of the individual as a rational being and a responsible member of society.

Science and the arts are not dichotomous but are by nature allies. If the interdependence of science and the humanities were more generally understood, men would be more likely to become masters of their technology and not its unthinking servants.

Even the most gifted individual, whether poet or physician, will not realize his fullest potential or make his fullest contribution to his times, unless his imagination has been kindled by the aspirations and accomplishments of those who have gone before him. The arts and letters are therefore, where we look most directly for the enrichment of the individual's experience.

Over the centuries, the humanities have sustained mankind at the deepest level of being. In the formative years of our own country, it was a group of statesmen who fused their own experience with that of the past to create the enduring Constitution of the Republic.

During our early history, we were largely occupied in mastering the physical environment. Soon after, advancing technology put its claim on our energies. The result has often been that our social, moral and esthetic development lagged behind our material advance. We are proud of our artists and scholars and our technology, which has made their work highly available, but this is not enough. Now more than ever, with the rapid growth of knowledge and its transformation of society's material base, the humanities must command men of talent, intellect and spirit.

The state of the humanities today creates a crisis for national leadership. Many of the problems which confront the people of the United States involve the humanities. Among them are the following:

- All men require ideals and vision. Americans need today, as never before, understanding of such enduring values as justice, freedom, virtue, beauty and truth. Only thus do we join ourselves to the heritage of our nation and human kind.

- Wisdom - without the exercise of wisdom, free institutions and personal liberty are imperilled. The humanities impart insight and wisdom.

- When Americans accept their cultural responsibilities, the arts will help us understand cultures other than our own. Few people can understand a nation which spends billions on defense and will do little or nothing to maintain the creative and imaginative capabilities of its own people.

- World leadership cannot exist solely on the force of wealth and technology. Only excellence of goals and conduct entitle one nation to ask others to follow its lead.

- Greater life expectancy and automation make leisure a source of personal and community concern. The arts and humanities provide a stabilizing influence and fill the abyss of leisure profitably and enjoyably.

- The arts and humanities hold values for all human beings regardless of their abilities, interests or means of livelihood. These studies hold such value for all men precisely because they are focused upon universal qualities rather than on specific and measurable ends. They play a uniquely effective role in determining a man's behavior and values. These studies therefore should not be reserved for scholars alone but should be for all students whether they leave school after grades 9, 12, or after college or a doctoral degree. While the schools are not the only agency to accomplish this task, there is no other in America that bears so heavy a responsibility.

USING CUE MATERIALS EFFECTIVELY

The following points are stressed to give insight into the CUE system and the utilization of CUE materials. CUE schools are supplied with packages of media described in the CUE guides. Other school or libraries may also acquire the CUE materials from the listed producers in the back of this guide.

. CUE guides contain a wide selection of classroom tested materials related to the New York State Curriculum so that the teacher may select those which best suit the needs of his group.

. The Synopsis which is a description of each piece of material is provided for the teachers convenience in selecting material to preview.

. Synopsis and "Suggestions for Class Preparation" provide for class orientation and motivation.

. "Look and Listen For" items point out important areas in the material. Alerting students to these items results in increased retension of important factors.

. "Follow-Up Activities" contain numerous suggestions to stimulate the teachers own creativity.

. The Related Materials listings saves teacher time in locating other sources. Librarians may wish to acquire CUE related materials for teacher and student convenience.

. A stimulating learning atmosphere is made possible through permanent and traveling exhibits of art reproductions and realia as well as performances provided by CUE. These activities serve as a unifying thread around which many student experiences may be grouped. Such beneficial unification of learning experiences may be further enhanced by:

  . occasional use of team teaching
  . use of art and music teachers as resource persons

. A TV program "Cultures and Continents" provides for mountain top experiences ordinarily not obtainable in the classroom. This program gives insight into non-western cultures through their arts. Large group viewing of these programs enables some teachers to have free time for mutual planning.

. Kinescopes (filmed versions) of these shows are available for those schools not serviced by TV.

. Cutural organizations channel many of their services to schools through CUE.

- Business and Industry provide materials for schools through CUE. Such services are related to the curriculum in a meaningful way.

- CUE provides materials to develop abstract concepts and generalizations. Some of these materials may be seen, felt, smelled, heard, manipulated, or organized, assembled or taken apart during learning. These experiences are those which are retained and recalled and become a permanent part of the students knowledge.

- There is no substitute for teacher guidance and insight in selecting planning, organizing and using instructional materials. CUE provides the teacher with a wide choice of classroom tested, teacher certified materials which save teacher time in locating and evaluating materials and free that time for the important personal aspects of teaching.

- CUE materials are keys which open doors to new vistas of learning interest, broaden horizons and increase perception but it is still the teacher who remains THE MASTER KEY in proper selection, use and development of insights.

The Argument for Inter-disciplinary Relationships

Too commonly, the teacher teaches his subject, or a unit within it, without reference to its relationship to other components of the curriculum. Students often study one subject after another, with no idea of what his growing fund of knowledge might contribute to an integrated way of life.

The special job of education is to widen one's view of life, to deepen insight into relationships and to counter the provincialism of customary existence; in short, to engender an integrated outlook.

The arts and humanities may be used as a unifying thread in the curriculum. This unitary view of the curriculum is important because:

- Comprehensive outlook is necessary for intelligent decisions.
- A person is an organized totality - not a collection of separate parts.
- An atomized program of studies engenders disintegration in the life of a society.
- The value of the subject is enhanced by an understanding of its relationship to other subjects.
- Knowledge does not exist in isolation; integrated subject matter is more meaningful.

TIME TO INCLUDE THE ARTS?

Many teachers are firmly convinced of the worth of including the arts in the curriculum but profess they do not have the time to do so. The following are a few suggestions for making time available.

- Use the arts as a vehicle for subject skills
  The study of all subjects needs a vehicle. The arts can be such a vehicle - one can learn all the technique and skills of reading and communication while learning about the arts. Art and science are inextricably related; both are looking for sense, order, and beauty in the universe. True understandings of the people of the world cannot be grasped out of the context of their arts. Industrial arts are an outgrowth of fine arts. Homemaking involves knowledge and use of arts. The compelling reason for use of the arts as a vehicle is that students today are in dire need of acquiring a much higher level of culture than was formerly thought adequate.
- Use of large group instruction
  Several groups may view T-V, a film or hear a lecture given by one person, thus freeing teachers for mutual planning or conference.
- Independent Study
  Students may use filmstrips, programed learning or do independent research on their own in study hall or learning center or library.
- After school seminars
  On arts and humanities for interested groups.
- Use of time ordinarily not used for study before school, lunch hours, home room activity periods may be used for listening to good music or other activities.
- Out of School time
  Evenings, weekends may occasionally be used for museum or concert visits, architectural tours.
- Assembly programs may be cultural in nature. Thus large groups can be reached.
- Use of a stimulating environment
  Students learn at least as much outside of class as in. Educational displays provided by CUE, effective bulletin board displays create an atmosphere for learning and teach students in incidental moments.

TO THE TEACHER

CUE'S OBJECTIVE IS TO EDUCATE FOR LIVING AS WELL AS MAKING A LIVING.

- Skills and techniques are important and must be taught well; but skills and techniques alone are not enough education for life in todays complex world. The increasing knowledge and problems, the complexity of modern life demand a higher level of education and understanding from ALL students than was before thought necessary.

- It is impossible to teach the student all the knowledge and skills he will need for the unknown future. In our rapidly changing society skills soon become outdated and memorized facts are soon forgotten.

- Therefore, many educators feel it is important to streamline courses, to teach basic ideas and skills but to also to take time to give students research skills and a background of interests which will lead them to go on to a lifetime of learning.

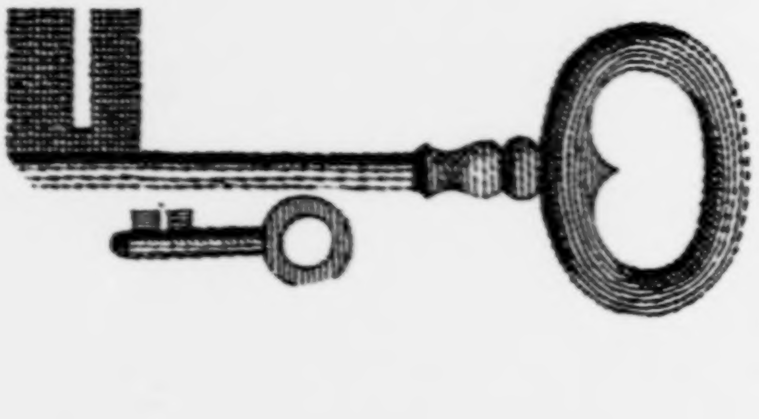
- Character building attitudes must be taught by every teacher. This vital job must not be left to one or two areas of the curriculum. The arts and humanities offer the opportunity for the teaching of universal and basic truths and lasting interests. These attitudes and appreciations, basic to the good life, are as vital as skills. Citizens possessing mere affluence without knowledge, appreciations, insight character and taste cannot function successfully in a democracy.

- Rapidity of change in industry make versatility imperative. General education, background of understandings, ability to do research, prepare the individual for relearning if his job skills become outdated.

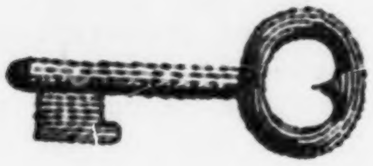
- CUE materials open vistas for worthy use of rapidly increasing leisure time brought about by automation.

- An appreciation of the arts of the past build foundations for lasting interests and provide perspectives for viewing and judging the arts of the present and future; an important skill for the consumer and designer of industrial products.

- Appreciations for the fine arts and crafts enhances the understanding and appreciation of fine design and workmanship in machine made products as well as assisting the student to realize how the machine has made possible the ownership of fine quality articles and has brought through photolithography and the printing press a heritage of beauty and wisdom to all men.



CULTURAL ITEM: "A IS FOR ARCHITECTURE" (Film)
Film Board of Canada
30 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the origins and the development of architecture and thus to provide a basis for its appreciation.

To assist students in understanding architecture and its purpose.

SYNOPSIS:

When a student walks down the street of his home town, what does he see? Does he ever look at the buildings and wonder what influenced their design and construction? Does he fathom this mystery and realize that our buildings speak, or should speak, of our way of life, of our culture, or of our lack of culture?

When man ran out of enough caves to shelter him or lived where there were no caves, he met his needs by constructing crude huts. Every man was his own architect. Then, as man began to congregrate in cities, he began to build bigger and better. He built temples and monuments to his gods, palaces for his nobility, and walls to protect him from his many enemies. The average man's house was still not much more than a hut.

Temples, monuments, palaces and even walls continued to become more magnificent as man became more civilized. The Egyptians, Greeks, Romans and the Byzantines expressed their philosophy of life, their dreams and struggles, as well as their level of technology in their architecture.

The Egyptians expressed their preoccupation with life after death. Their temples and monuments, massive constructions of stone, made for the privileged few.

The Greeks believed in beauty of the body and of the spirit. The educated and free Greek epitomozed the harmony of body, mind, and soul. He expressed this in the purity, the perfect harmony and balance of his temples. The city states created public buildings which expressed in their utilitarian form and beauty the desired harmony of civic life, and man's relationship with the world in which he lives.

The power of Rome engulfed the western world and man himself was glorified. The invention of the arch made possible the dome and even greater monuments in the form of triumphal arches, public buildings, arenas and vast walled cities as centers of power.

The death of Rome and the birth of Byzantium brought about a refinement of Roman architecture and through a wedding with the Oriental influence, the Church of Santa Sophia resulted.

The dark period of history called the Middle Ages emphasized the engineering phase of architecture in the building of bigger and better fortresses and walled cities to protect man from his worst enemy, man. The hope and aspirations of man took refuge in religious aspirations and the cathedral rose into the sky. Now we hear of the term Gothic architecture.

A rediscovery of the glories of ancient Greece and Rome brought about an adoption of Greek originality and Roman engineering by architects. Man clamored to recreate in grand scale the pillars, arches, domes, and facades of the past. The epitome was the Palace at Versailles, ornamental and beautiful beyond anything else of that time. Yet it places these attributes far above any utilitarian consideration, as its main function was and still is as a monument to extravagance beyond reason.

The Industrial Revolution brought about some interesting innovations. Iron and glass made possible the erection of the Crystal Palace at the Great Exposition in London of 1851 in about four months where it would have taken years and even decades to erect the standard stone building. Fabrication of the iron sections in the factory and their assembly on the site created the Eiffel Tower. A new age was born! Man's architecture was no longer dependent upon massive stone and wood structures. The skyscraper, a cage of steel and reinforced concrete, covered with a multitude of new materials, was born. New free, organic shapes were created in accordance with existing needs and existing conditions. Man had the freedom of applying new solutions in accordance with the materials and the technology of his age.

Is this what a student knows and sees when he walks down a street of his hometown?

SUGGESTED PREPARATIONS OF THE CLASS:

To assist students to think of architecture as an expression of its times rather than just a heap of brick or stone, explain: This is an attempt to explain the why of architecture. It places man at the center and builds upon his attempts to express himself and those about him in the form of the building which shelters him and his possessions. It is the what, why and how of this building with which we're concerned in the following suggestions:

. Display pictures or photo-copies of buildings of various periods throughout history. Show man's progress in architecture and discuss with the class.
. Have students list as many construction materials as possible. Discuss and determine when they were first available to architects.
. Show pictures of architecture on an opaque projector. Discuss the philosophy of the builders each expresses, and the conditions of the period during which it was built. Discuss the technology of the period and the construction techniques used.

KEY WORDS:

Arch
Architecture
Byzantium

Crystal Palace
Dome
Eiffel Tower

Gothic
Santa Sophia
Skyscraper

PUPILS SHOULD LOOK AND LISTEN FOR:

- The art work and music in the film.
- Examples of architecture in contemporary cities.
- Ancient Egyptian, Greek and Roman architecture.
- Byzantine architecture symbolized by Santa Sophia.
- Early Middle Age and Gothic architecture.
- Architecture of the Renaissance.
- Effect of the Industrial Revolution.
- The New York City skyline.
- New solutions in contemporary architecture.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To deepen and strengthen understandings from the film, discuss with the class:

- The effectiveness of the art work used throughout the film.
- How the music enhanced the film.
- The philosophy, materials, and technology of:

  The ancient Egyptians, Greeks, Romans.
  The Medieval Period, the Renaissance.
  The Industrial Revolution, contemporary America.

- The purpose of architecture.
- How architecture expresses the thoughts, ideals, hopes and aspirations of its builders; the degree of technology and materials available and the history and customs of its builders.

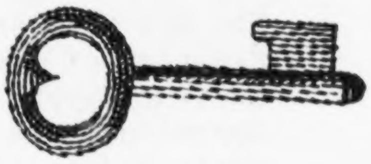
SUGGESTED RELATED ACTIVITIES:

- Visit local examples of architecture which are consistent with what the film presented. Discuss with the class.
- Encourage student library research into the various architectural periods or phases, their origin and development. Present as a display, oral report and written report.
- Invite an architect as guest speaker.
- Visit a local architectural firm.
- View CUE film "The Awakening Giant" - (architecture of Brasilia).
- Show students Latin American architecture, especially that of Candela and Meyer, "Craft Horizons" - September, October 1963 (CUE Industrial Arts Kit).

RELATED CREATIVE ACTIVITIES:

- Design or redesign a small structure (summer cottage) and then construct a scale model. Display the models and conduct a design competition.
- Have students observe and study the architecture of Frank Lloyd Wright, Corbusier, Mies Vander Rohe, thin concrete shell construction and other space structures (see Priory Church CUE Kit), geodesic dome, dymaxion house. Then ask them to design a building of the future.

CULTURAL ITEM: "ARCHITECTURE IN FRANCE FROM THE ROMANS TO TODAY" (Filmstrip)
Cultural History Research
28 colored slides with text.



CURRICULUM AREA: Industrial Arts.

PURPOSES:

To acquaint students with the evolution of architecture through the ages, and reveal that it is a product of man's technology and the materials available.

To evaluate architecture in accordance with its functionalism as an artistic expression of the society that created it.

SYNOPSIS:

Architecture is both an art and a science. While architecture is the most functional of all the arts, it also is the one that most inclusively catalogues the ideals of its society. An architect must know the needs of people and be an engineer if his work is to be good. He must also be an artist if his work is to be great.

This filmstrip presents the beautiful and great architecture of France. Since architecture reveals the needs and ideals of its creators, it is possible to trace the ups and downs of Western European civilizations, through a study of these structures.

SUGGESTED PREPARATION OF THE CLASS:

To assist students to realize the functional nature of architecture and also the fact that it reveals the society of its creators, secure and display pictures of architecture from various periods of history, such as:

Egyptian: **tombs and pyramids show preoccupation with death afterlife.**
Greek Temple: simple, refined, perfectly proportioned design and restrained decor reveals logical thought, skill, classic, calm and reason.
Roman Triumphal Arch: shows Roman military prowess desire for power.
Gothic Cathedral: shows intense religious preoccupation a striving toward Heaven.
Renaissance Palace: shows growing power and wealth of man; preoccupation with worldly things.
Early American: shows simple democratic view of life.
Modern Architecture: reveals highly technical society.

KEY WORDS:

Apse
Aqueduct
Rose Window
Arena
Baroque
flying buttress
Fresco
Gothic
Chateau
Graeco Roman
Romanesque

PUPILS SHOULD LOOK AND LISTEN FOR:

- The influence of the Roman Empire upon the French culture and architecture during the period lasting from the 2nd to the 12th Century.

- The vertical soaring effect of Gothic architecture.
- The use of stained glass windows in church architecture.
- How the unrest of the middle ages brought about the fortification of bridges, cities and even churches.
- The intricate, lacy stonework of the baroque Gothic.
- The style of the homes of middle-class merchants in the late Middle Ages.
- The grandiose effect of the Palace at Versaille.
- The introduction of iron and concrete.
- The contemporary use of building materials and architectural design.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

1. Why is architecture considered as an artistic expression of a civilization?

2. How is architecture influenced by the economic, political and social life of the times?

3. How did the Romans use concrete in architecture?

4. What effect did Christianity have upon architecture and culture during the Middle Ages?

5. How did Gothic architecture differ from the Romanesque?

6. Was good architecture available to the peasant and middle class people?

7. How were the great cathedrals, fortresses and palaces built without steel or reinforced concrete?

8. What was the effect of the introduction of iron and steel in the construction of buildings?

9. Compare contemporary architecture with that of the Romans, the Middle Ages, and the period of Napoleon. What are the primary principles and concerns of architecture today?

10. Why can it be said that contemporary architecture has been liberated through creative imagination?

SUGGESTED RELATED ACTIVITIES:

Encourage student library research based upon the slides shown. Each student might investigate the design, materials, and construction techniques as the culture that built and present the information as a display, oral report or written report.

Invite an architect or other expert on architecture to lecture on and analyze the development of architecture throughout the history of man.

RELATED CREATIVE ACTIVITIES:

Since architecture is a combination of the materials and techniques available, and an expression of the needs and desires of the society which creates it, some students may wish to envision what the architecture of tomorrow may be like. Some may wish to make sketches or models of such architecture.

RELATED MATERIALS:

Films:

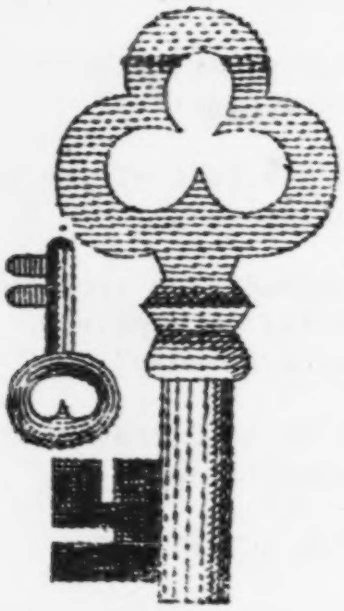
"Cathedral at Chartres"
Encyclopedia Britannica Films (Project CUE)

"Skyscraper"
Brandon Films (Project CUE)

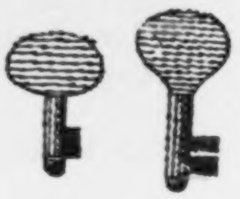
"Biography of Frank Lloyd Wright"
Star Film Co. (Project CUE)

Book:

Keys to Art by John Canady
Tudor Publishing Co.



CULTURAL ITEM: "BIOGRAPHY OF FRANK LLOYD WRIGHT" (Film)
30 min., B & W, Star Film Company.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To give students insight into the philosophy and work of one of the greatest and most controversial architects and innovators of modern times.

To acquaint students with the concept of organic architecture.

SYNOPSIS:

Frank Lloyd Wright created a concept of architecture that has had profound influence on contemporary architectural thinking. He felt buildings should be designed to fit naturally into their surroundings. He did not copy from older architectural forms, but derived his inspirations from nature. This is the basis of his organic architecture. Therefore, it is a symbolic epitaph that reads: "Love of an idea is love of God."

The film shows the important events of Wright's life as an architect, and examples of his work. Man is seen in harmony with nature, surrounded by its beauty. Wright's philosophy, his principles, his legacy to man are expressed in his own voice and words.

SUGGESTED PREPARATION OF THE CLASS:

Frank Lloyd Wright's individualism stands out as a shining example of the American right to be different. In the light of today's trend toward conformity his architecture can be utilized to encourage students' creative and independent thinking.

1. This film may be used in a unit on architecture to show how America is beginning to formulate an architecture distinctly expressive of our culture. The film, "Chartres Cathedral," shows a medieval architecture intended to glorify religion. The film, "Skyscrapers," shows contemporary architecture expressing a materialistic approach through new materials and techniques. This film represents a combination of modern technology and a realization of God through nature as expressed by Frank Lloyd Wright in his architecture.

2. Prepare bulletin board displays of Wright's work using pictures (from House Beautiful) or photocopies.

3. Have students collect house designs they would consider buying or building. Specify cost, materials, location, terrain, floor area and number of rooms.

4. Discuss Wright's individualism and theories of architecture. Illustrate discussion with pictures of organic architecture. Bring out the meanings of:

Continuity
Environment
Exemplar
Function
Innate
Nature
Organic Architecture
Principle
Form

PUPILS SHOULD LOOK AND LISTEN FOR:

- Wright's concept of architecture.
- Evidences that Wright's designs and buildings were labeled as "not conforming" to accepted or conventional design and construction.
- Examples of "organic architecture" which "grows from the earth like trees."
- Examples of building materials taken from the immediate and natural surroundings of the actual construction.
- Relationship between nature and Wright's concept of architecture.
- These examples of Wright's work: Taliesin (Tah-lee-es-sin), meaning "Shining Brow," his home; S. C. Johnson Company Building, Racine, Wisconsin; Robie House, Chicago; house at Bear Run, Pennsylvania; Guggenheim Museum, New York City; Greek Orthodox Church Milwaukee.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To improve understanding of the concepts presented in the film discuss:

- What was Wright's opinion of architecture of the past 500 years?
- What must be considered about the "natural situation" when building a house?
- What is meant by "Form follows Function" as taught to Wright by Louis Sullivan?
- Why was learning by doing, and knowing life by living it, considered by Wright essential to becoming an architect?
- What is meant by the term "organic architecture?"
- Is an architect the key man of a civilization?
- Is a home more a home if it is a work of art?
- Why is beauty required in our lives?
- What did Wright mean when he said that the Lincoln Memorial and the Capitol Building indicated a lack of culture?
- What is your opinion of the Guggenhiem, compared with more conventional museums?

SUGGESTED RELATED ACTIVITIES:

- Encourage student research into Wright's philosophy life and work. Present results as displays, oral reports and written research papers.
- Visit examples of organic architecture if available locally. Visit local housing developments where houses are "mass-produced." Discuss.
- Invite a qualified local architect to lecture on Wright's principles and their influence on architecture.

SUGGESTED RELATED CREATIVE ACTIVITIES:

1. Form a model architectural firm to create student interest. Have student solve an architectural problem, perhaps a summer or year-round cottage. Use the following method of solution:

   Statement of problem (objective).
   Analysis and research (ideas, thumbnail, sketches).
   Preliminary sketches (floor plan, rendering of elevation).
   Revisions (improvement of basic design).
   Models (scale building with terrain).
   Final rendering (final floor plan and elevations).

2. Have students list materials, construction techniques and occupations that cen be used in designing and building a house. Relate and apply these to the above architectural problem.

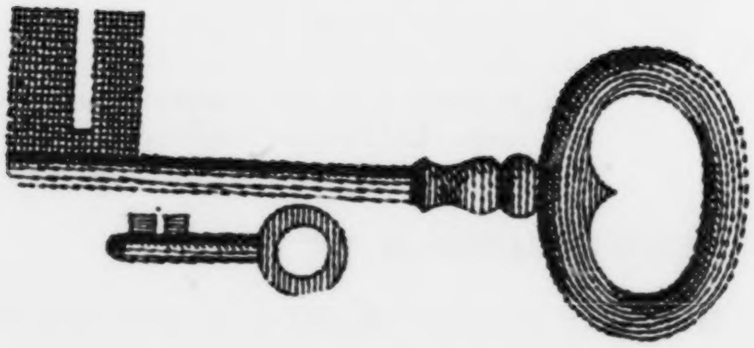
RELATED MATERIALS:

Films:

Architecture d'Aujourd 'hui (Modern Architecture). (Museum of Modern Art Film Library)
The American Look. (The Jam Handy Corporation)
Skyscraper. (Brandon Films)

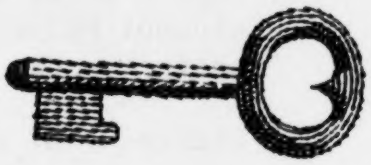
Book:

Frank Lloyd Wright - Rebel in Concrete. (Macrae Smith Co.)



CULTURAL ITEM: "CHARTRES CATHEDRAL" (Film)
30 min., Color, Encyclopedia Britannica Films.

CURRICULUM AREA: Industrial Arts



PURPOSES:

To study the structure of a medieval cathedral.

To show how architectural styles result from evolving processes and materials, and the changing needs of man.

To illustrate how architecture reveals the hopes, aspirations, skills and way of life of the people who created it.

SYNOPSIS:

Chartres Cathedral is considered one of the noblest and most inspiring structures ever created. Its engineering is a magnificent feat. The structure is an expression of medieval intellectualism.

Medieval man's life was hard. Mere existence was difficult in this time of ignorance, plagues and constant warfare. The only hope of happiness seemed to lie in religious devotion which could eventually lead one to a good life in Heaven. Chartres is an expression of this thought. Its architecture is both Romanesque and Gothic. It encloses the mystery of space in a vastness that increases in the worshipper his wonder about the ultimate mystery, God. The cathedral became a symbol of the universe in all its vastness.

Since the people who worshipped in the cathedral were illiterate, the stained glass windows, and the statues at the portral and on the buttresses, portray stories from the Bible, and tell of the life of Christ.

The engineering was a system of thrust and counter-thrust, achieved through the use of vaults and flying buttresses. The result is a surprisingly delicate and complicated structure.

Superb color photography and Latin chants accentuate the cathedral's beauty. The narration by John Canaday reveals clearly how the cathedral expresses the beliefs, knowledge and culture of the time.

Note: The film may be used in conjunction with the films "Skyscraper" and "Frank Lloyd Wright." It will show the contrast in style, materials and construction. In Chartres man is deeply concerned with the mystery of God. In "Skyscraper" we see the materialistic concern of our technological society. In Frank Lloyd Wright's work we see a combination of both.

SUGGESTED PREPARATION OF THE CLASS:

1. To orient student thinking toward the film content, explain to them

that architecture, unlike some other arts, is always utilitarian. Nonetheless, it reveals the ideals of its society. The greatest buildings of the world have been commissioned as appropriate shelters for the activities most closely connected with the spirit of an age. Among these the most complicated and complete summary of man's life, hopes and fears in any age is the Gothic cathedral.

2. Display pictures or photocopies of famous cathedrals throughout the world. Show detail pictures of windows and sculpture, explaining meanings of these terms:

Buttresses	Vaults	Gothic
Medieval	Romanesque	Mysticism

3. Discuss materials and techniques available in medieval times.

PUPILS SHOULD LOOK AND LISTEN FOR:

. The beauty and artistry of the photography.
. The mood created by the Latin Chants.
. The feeling of awe and vastness that the film attempts to convey.
. The symbolism of the stone statues.
. The expression of medieval thought in the visible form of the cathedral.
. The basic construction of principles used.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure complete grasp of the concepts presented in the film, discuss with the class:

. Why was the cathedral called the "Bible of the Poor?"
. What were the purposes of the stained glass windows?
. How was the cathedral a giant symbol of the universe to medieval man?
. How does knowledge for modern man differ from that of medieval man?
. What did space mean to medieval man? To modern man?
. What materials were used to construct the Cathedral?
. What principles of engineering made the construction of such a large building possible?
. How did the construction of such a cathedral utilize the skill of medieval craftsmen?

SUGGESTED RELATED ACTIVITIES:

1. Encourage student library research about medieval architecture. Present findings as a: display, oral report or written report.

2. Visit local example of church architecture and discuss the materials, structure and symbolism of its architecture.

3. Encourage an investigation into the types of artists, craftsmen and workers required to construct a medieval cathedral as compared to the people and machines required for the construction of a contemporary skyscraper.

4. Show the film "Skyscraper" - (see CUE Lesson plan)
   Find out how many years and how much labor were required to build Gothic cathedrals compared with the time and labor required to construct a comparable building today.

5. Allow some pupils to find the dates of construction of Chartes Cathedral. Prepare a collection of flat pictures designed to show the contrasting materials and techniques used in modern and medieval buildings of this type. The finest examples of French Gothic cathedrals include those of Amiens, Chartres, Reims, Strasbourg and Notre Dame.

6. Other cathedrals of more modern construction which might be included are the Lincoln in England; the National Cathedral, Washington, D.C.; Cathedral of St. John the Divine, New York City; and St. Patrick's Cathedral, New York City.

RELATED MATERIALS:

Films:

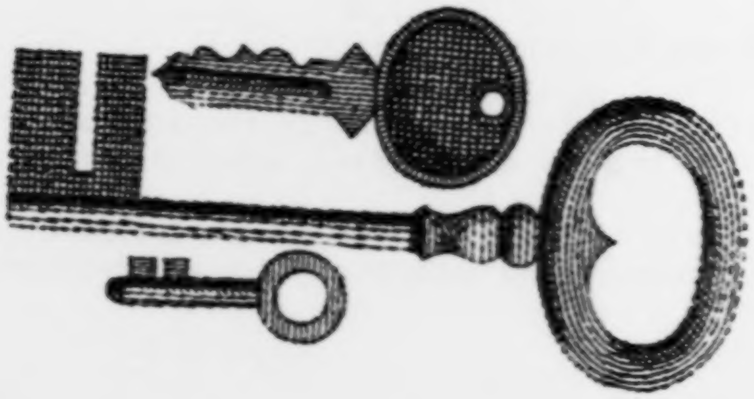
Skyscraper. (Brandon Films) (CUE)
Biography of Frank Lloyd Wright. (Star Film Co.) (CUE)

Slides:

Structural Materials and Forms in Architecture. (CUE)
Architecture in France from Romans to Today. (CUE)

Book:

Keys to Art. (Tudor Publishing Co.)



CULTURAL ITEM: "MATERIALS AND FORMS " (Slides, Tearsheets, Photographs, Drawings)

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with forms and materials used by architects in designing structures as a basis for the appreciation of architecture.

To become acquainted with the development of architecture throughout history.

SYNOPSIS:

Architecture is the science and art of making buildings beautiful and useful. It is science because the architect must understand the materials and equipment which go into buildings. It is an art because the architect uses shapes, colors, and relationships that make a building pleasing to the eye as well as functional in its use.

In very early days the Egyptians, Assyrians, and Greeks made buildings of wood, dried brick, and stone. They used primarily the post and lintel type of construction. This construction required strong, thick walls and columns. Window openings were small or nonexistent. Size of the building was limited by the length of wood or stone which could span two supports.

The use of bricks and stone in buildings made possible the arch, one of the most important discoveries in architecture. The arch consists of wedge-shaped stones or other materials placed together to form a curved bridge. These arches usually have a keystone in the center which binds the whole together. The downward pull of gravity and the weight of materials above on the wedge-shaped parts cause the sides of the arch to spread out. This outward force is called thrust. To make the arch secure, the thrust must be countered by heavy masses of masonry called buttresses or by other arches, as in an arcade. The semicircular arch is the most common form.

In the field of architecture advanced technology has always been a potential source of beauty. Borrowing the principle of the arch from the Middle East the Romans applied it to all kinds of engineering and architectural problems.

The Romans used arches for city gates, bridges, aqueducts, and monuments and to commemorate events of triumph. They used the vault, a structure related to the arch, which enabled them to put a roof over wide spaces without interior supports. One of the greatest uses of the vault is the Pantheon in Rome. Since the use of great arches requires heavy walls, Roman buildings were more massive than graceful. When Rome fell, Byzantine architecture combined Roman and Near Eastern ideas. The Byzantine and Islamic architecture used many domes and graceful arches.

In the Middle Ages, the pointed arch of Gothic architecture was developed. It seems, as do the spires of the churches, to be pointing heavenward. New architectural enginering techniques entered here and made possible higher, thinner-walled buildings supported by the innovation called the flying buttress.

The lancet or pointed arch is stronger than the round arch. Medieval architect-engineers were able to build a church whose walls were nearly all window, and the weight and thrust of whose elaborate vaulting was carried by a series of widely spaced buttresses. The horseshoe arch was used with great effectiveness in Islamic and Moorish architecture.

We see that technology and certain kinds of artistic beauty are closely allied. As new materials were developed, such as wrought iron, man began to think of new means of construction: the use of iron and steel, together with the prefabrication of parts and their assembly on location. Today great skyscrapers, bridges, monuments, public buildings and homes are influenced by radically new materials and forms that are possible because of our advanced technology.

SUGGESTED PREPARATION OF THE CLASS:

The fact that construction of structures both useful and beautiful is a science and an art, as well as an industry, is often unrealized or neglected. An understanding of the basic forms, materials, and techniques utilized throughout the history of man may be introduced, using the following suggestions:

- Include these materials in a unit on architecture or construction during a study of the basic industries.
- Prepare a bulletin board display of ancient and/or contemporary structures, using as many different forms and materials as possible.
- Prepare a display concerning the work of leading architects, past and present, noted for their leadership and far-sightedness in using forms, materials and techniques.
- Construct models of well-designed buildings, using forms and materials available in their era of construction.
- Prepare a bulletin board of the drawings photographs and tear sheets provided.

Arch
Architecture
Buttress
Keystone
Lancet
Post and Lintel
Vault
Wrought iron

- Use by the ancients of the basic materials of clay (brick), stone, and wood which are readily available in nature.
- The massive size and feeling of solidarity or weight of early structures.
- Use of the arch and the vault by the Romans.
- Byzantine use of the dome and the Islamic addition of minarets and arches in a more delicate and graceful, yet functional manner.
- The height and intricacy of the Gothic Church. Notice the numerous decorations for the sake of decoration. Also note the flying buttress support for outer walls, and the pointed arches inside the structure.

- The grace, lightness, beauty, and interesting variety of materials in contemporary structures.
- The availability of new materials and techniques of modern technology.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

- To insure understanding, discuss:
  - Basic forms of construction used in most structures.
  - Basic materials used in structures.
  - Contributions the following made to architecture:

Egyptians	Islam	Industrial revolution
Romans	Middle Ages	Modern technology
Byzantines		

  - What is architecture
  - How and why the philosophy of contemporary architects differs from architects in past eras.

SUGGESTED RELATED ACTIVITIES:

To further student appreciation of technology's contribution to architecture, discuss:

New constructional technology entered into the service of art in 1851 when Joseph Paxton designed the "Crystal Palace" Exhibition Hall in London. It was made of glass held together by metal. This structure broke all the rules of architecture. Many people thought it a horrible structure. Today buildings much like it dot the New York skyline.

Thanks to our technology, we can dwarf the loftiest Gothic cathedral, span the widest river. Not all modern structures are beautiful . Mere size is not beautiful. Some are horrors; yet technology has opened up new fields of esthetic enjoyment, new potential for grandeur sublimity.

SUGGESTED RELATED CREATIVE ACTIVITIES:

To put new found knowledge to work:

- Students may visit local construction sites to observe forms and materials used. Present as a written report or oral report, or prepare display with photographs and drawings.
- Take a field-trip to see pre-selected examples of architecture to actually observe utilization of forms and materials by architects and the construction industry: Commercial and public buildings.

- Visit a local architectural firm to observe the creation, design and planning of structures.
- Invite an architect, building contractor or structural engineer as guest speaker.
- Have students write to manufacturers for information concerning new and/or commonly used materials of construction.
- Investigate the proposed urban renewal plans of local or near-by cities.
- Students may design a contemporary building, making floor plan, elevation, and architect's rendering. Then construct a scale model using cardboard, fibre-glass, plastic, wood, and other materials available.

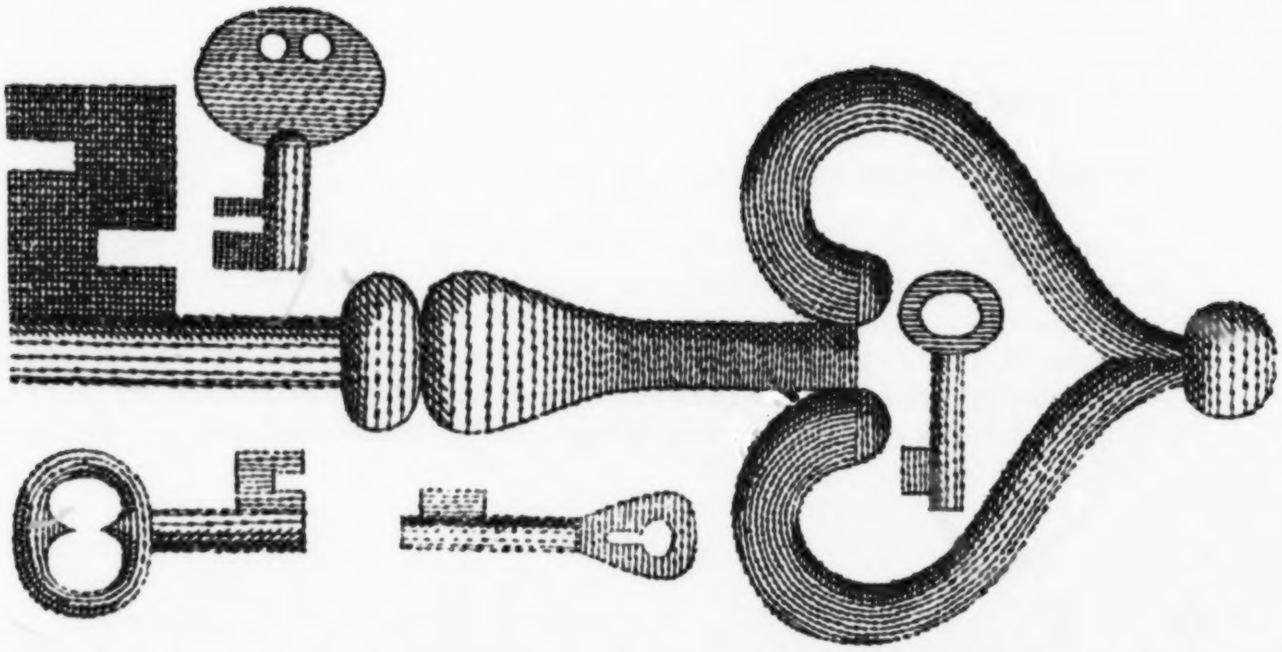
RELATED MATERIALS:

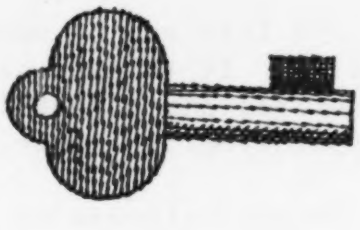
Film:

Chartres Cathedral. (Encyclopedia Britannica Films) (CUE)
Biography of Frank Lloyd Wright. (Two Star Film) (CUE)
Skyscraper. (Brandon Films) (CUE)
Unisphere. (United States Steel Corp.) (CUE)

Slides:

Architecture in France from Romans to Today. (CUE)





CULTURAL ITEM: "SKYSCRAPER" (Film)
21 min., B & W, Brandon Films.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To show how man is able to enclose more usable space with less and newer materials than ever before in a manner indicative of our present needs and technological culture.

To investigate current technical skills, materials and methods of construction and to show how they are important parts of the design and appearance of contemporary structures.

SYNOPSIS:

Man has been attempting to enclose usable space since he found that there were not enough caves or other natural shelters to go around. His basic need for shelter has progressed to our present need for living and working space. As our cities reach their practical boundary limits, there is no place else to go but up! Therefore, the tall structures of concrete, steel, and stone have been erected. These structures have come to be called skyscrapers.

Great structures like the Egyptian pyramids or the Greek Parthenon have been erected. But their usefulness is questionable. Truly great architecture is functional as well as esthetically beautiful. It is useful as well as monumental. This film vividly portrays the conquest of space and materials inherent in the technology of the American culture. The people who plan, construct and later will use the building are the heart throb of the structure that rises into the sky until it triumphs as a completed form and becomes a tribute to man's skill. The ever-present sounds of the bustling of the city and of the construction combine to involve the film's viewers in a symphony of progress and deliberate, meaningful, perpetual motion.

The photography presents exciting views of the construction activity that challenge the imagination. The colorful protrayal of the completed structure, and how it fits into its environment and yet has a distinct character of its own, is a testament to the genius of contemporary American architecture.

SUGGESTED PREPARATION OF CLASS:

This film deals with a contemporary structure utilizing the latest designs, construction techniques and materials. It is important that the students be made aware of other structures as well, both of today and of the immediate and distant past, in order to better appreciate contemporary architecture.

The film may be used as a part of a unit in architecture or structural design. It is especially useful invividly portraying the variety of materials and occupations available in the general areas of drafting, ceramics, electricity, metalworking, wood and textiles.

Prepare picture or photocopy displays or model dioramas of some notable architectural achievements: Egyptian pyramids; Greek Parthenon; Medieval castle; Gothic cathedral; American skyscraper. Then discuss with class. Prepare a bulletin board of construction materials and methods used in the past, and have students compile a list of comparable or better materials and methods used today.

PUPILS SHOULD LOOK AND LISTEN FOR:

. The creative artistry of the photographs.
. The way the rhythm of the background music is synchronized with the sounds of a giant, bustling city at work.
. T he patterns of design, the forms, and the textures which have transformed the basic construction materials into an organized mass of continuity, of function, of beauty, in an artistic architectural expression of our comtemporary culture.
. The use of color on the inside and outside of the building.
. The use o men, materials, machinery and tools as elements of construction.
. The number of industrial skill required to make the construction of a skyscraper possible.
. How architects are changing the face of the city.
. The timing and co-ordination of all activities in erecting the building.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure comprehension of concepts presented in the film, discuss with class:

. The importance of design and planning in construction a building.
. Why were models of the structure used and so many samples of materials investigated?
. What construction operation were used?
. What materials were used?
. What occupations were needed to complete the skyscraper?
. What should a skyscraper look like?
. What does the architect attempt to express visually in his design of skyscraper 666?
. Is the simplicity of form used in the building pleasing and functional? Why?
. How would the fascinating world of color, pattern and texture which is the skyscraper affect the people working in the building?
. Why could this skyscraper be termed as a "cathedral of commerce?" Does it symbolize contemporary America?

SUGGESTED RELATED ACTIVITIES:

- Encourage student research into the work of contemporary architect such as:

  Frank Lloyd Wright
  Eero Saarinen
  Edward Stone
  Richard Neutra
  Candela
  Parmo Nervi
- Have students visit and evaluate local examples of good contemporary architecture.
- Have an architect as guest lecturer to present his viewpoints on contemporary architecture and the construction of buildings.

SUGGESTED RELATED CREATIVE ACTIVITIES:

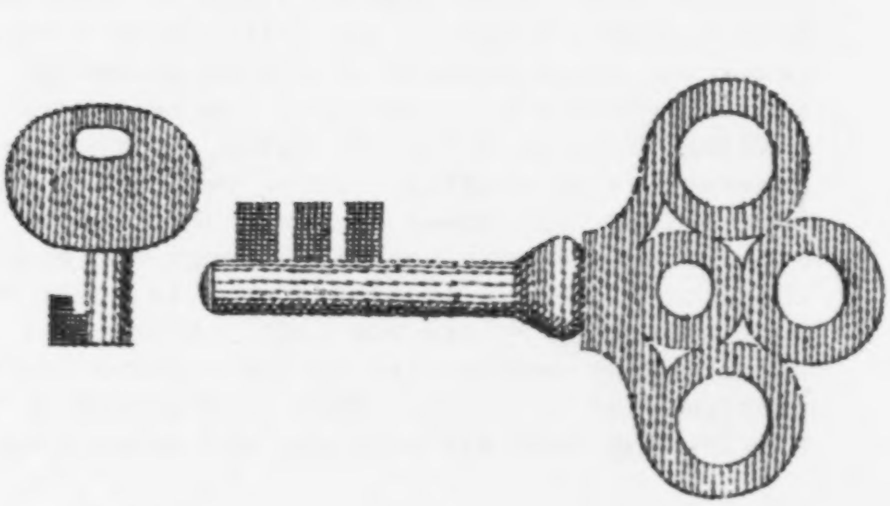
1. Select prints of painting by Holbein, Botticelli, Hartnett, Kandinsky, Klee, Miro, and Mondrian from the Metropolitan Seminars of Art. Ask students which paintings they would select to decorate an office in the "666" building?

2. Ask them to find, clip and assemble pictures from magazines of the types of furnishings they would choose for a skyscraper office. Help them understand that the bold bright colors and simple striking shapes of contemporary paintings; sculpture and furnishings go well with the simple stark lines of contemporary architecture.

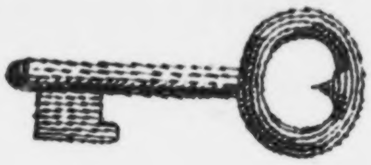
RELATED MATERIALS:

Films:

Aluminum on the Skyline. (Aluminum Company of America)
Biography of Frank Lloyd Wright. (Two Star Film Company) (CUE)



CULTURAL ITEM: "TOWN PLANNING: THE MASTER PLAN" (Film)
15 min., B&W, International Film Bureau



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the purpose and the process, and necessity for town planning.

To assist students in understanding the problems of modern cities.

SYNOPSIS:

Plato wrote: "The highest and most beautiful thought is that of organizing the city, that being the highest order of wisdom and justice." How true this has become in our modern age of rapid growth and expansion of our cities. Not only have cities been found lacking in the original layout of streets and zones, but they are still compounding error in a frantic rush to meet the needs of a suburban population.

What is needed is an organized plan for city growth, an overall plan that estimates needs for the future as well as does something about present needs. It is not but a flexible guide to better organization and development.

This film presents a typical city with problems. Through photography and animation, it presents the problems and then goes about solving them. This is problem-solving on a grand scale. It is pertinent to most cities of our country today and can be used as a welcome addition to a study of architecture and construction in the industrial arts.

SUGGESTED PREPARATION OF THE CLASS:

This is an interesting subject that will affect most youngsters and their families. The following are suggested for better understanding and to introduce the film:

- Prepare displays of local urban renewal plans and drawings. (Secure Albany urban renewal plan booklet from CUT Kit)
- Display pictures or photo-copies of before and after of urban renewal and town planning.
- Discuss local urban renewal plans or existing projects.
- Have students identify and write about locations in the local area requiring urban renewal or better planning. Discuss in class.
- Enable students to understand the necessity for town planning by discussing "What is a Town?" Bring out that people formed towns for convenience of trading, mutual protection and company, specialization of services, and other reasons. Most towns just grew without plan. Old streets now are not wide enough for modern traffic and cause congestion. Every inch of ground is built up as the town grows. No open breathing spaces are left. Old houses deteriorate and become slums. Many people flee to the suburbs leaving the town to its problems and to decay. Many cities such as Albany and St. Louis are tearing down old sections and rebuilding on a new plan.

PUPILS SHOULD LOOK AND LISTEN FOR:

- The modern jazz accompanying the film.
- The gaudiness, the industrial complex, and the slums of the huge city complex.
- The development of cities.
- The effect of the Industrial Revolution.
- The effect of population and traffic on town planning.
- Planning the center of the city, the industrial zones, residential zones, and traffic arteries.
- The well-planned residential areas.
- Plato's comment on town planning.

PRESENT MEDIA.

SUGGESTED RELATED ACTIVITIES:

1. To further understand town planning, discuss with the class:
    - What is town planning?
    - Reasons for the haphazard confusion of the city.
    - Effects of the machine on the development of cities.
    - What is the city's overwhelming role today?
    - How can existing cities be redeveloped?
    - Advantages of planning.
    - Plato's comment on organizing the city.

2. Display Artist Jr. Booklet (CUE Industrial Arts Kit) on Charles L'enfant's plan of Washington, D. C.

3. Display pictures of Paris, Versailles, and Washington, D. C., to show the beautiful results of town planning.

SUGGESTED RELATED CREATIVE ACTIVITIES:

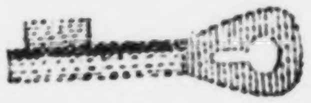
- Visit urban renewal area of a local city to view the before, during, and after stages of redevelopment.
- Invite the urban renewal director of the local city as a guest speaker.
- Study and discuss urban renewal plans of a local city. Students may wish to redesign certain areas.
- Build a scale model of the planned redevelopment.

RELATED MATERIALS:

Films:

A is for Architecture. (Film Board of Canada) (CUE)
Biography of Frank Lloyd Wright. (Star Film Co.) (CUE)
Skyscraper. (Brandon Films) (CUE)
A Place to Live. (Chas. Guggenhiem Association, Olive St., St. Louis, Mo.) (St. Louis urban renewal)
Mood of Three Cities. (CUE)
The City Series by Lewis Mumford. (National Film Board of Canada)

Book: The City in History. (N. Y.: Harcourt Brace World, Inc., 1961)



CULTURAL ITEM: CUE INSIGHTS - ARCHITECTURE

The following simple insights may be gained while studying the regular curriculum:

- Architecture concerns everyone for it shelters and enhances life.
- After emerging from the cave primitive man tried to satisfy his needs for shelter from the elements by making dwelling places. (ex., crude huts)
- He satisfied his need for self expression and beauty through building temples for his Gods (ex., Stonehenge).
- The Egyptians exalted religion in the person of their Pharaoh and left imperishable records of their beliefs in tombs and temples. Their sculpture created an effect of grandeur and magnificence. (ex., Pyramids, Sphinx - Temple-Karnak)
- From this influence the Greeks created a simple and beautiful style using post and lintel, colonnade, architrave, frieze and cornice. (ex., Parthenon)
- The Romans were good engineers. They discovered types of construction such as the arch and the dome which we still use today. (ex., Pantheon in Rome)
- Gothic architecture utilized the flying buttress to support walls which could now be thinner. It pierced these walls with large openings filled with stained glass and decorated them with sculpture. (ex., Notre Dame)
- Greek, Roman and Gothic influences live on in our present day architecture in homes, libraries, schools, churches, museums and other public buildings. (Find local examples)
- When iron and steel came to be used in architecture, new styles such as the skyscraper evolved. (ex., Eiffel Tower - Skyscrapers)
- Modern architects are constantly experimenting with new forms and materials such as aluminum, concrete, plastic, stainless steel. (examples or photos, see Architectural Record)
- Some important contemporary architects are Frank Lloyd Wright, Mies Van der Rohe, Oscar Niemeyer, Le Corbusier, others. (find photos of examples of their work)
- Some important contemporary buildings in the New York area are the Guggenheim Museum, Seagram Building, Idlewild International Airport. Can you find contemporary buildings in your area?

These further insights may be brought out through discussion and observation.

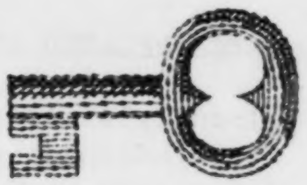
1. A building functions as a shelter but exactly what is being sheltered is sometimes obscure. For example, classic temples, formerly religious symbols, now house buildings devoted to law, finance, art, science, education or religions, hieratical to pantheism. Assist students to understand that modern architects strive to have a building design suit its purpose as well as its surroundings and inhabitants.

2. The design form of a building depends in large part on the following factors:

   - The material of which it is made.
   - The degree of skill and scientific knowledge of the architect and builders.
   - The geographic and climatic factors in the environment.
   - The prevailing taste of the times.
   - The function of the building.
   - The philosophy of the society.
   - Economic and social pressures.
   - The individual tastes of builder and owner.

3. Styles in architecture change when:

   - New materials become available.
   - New techniques and engineering principles are evolved.
   - New influences are felt in society.



4. The meaning of modern architecture is no less eloquent than the spiritual implications of the Gothic church or the magnificence of the Paris Opera House. While scientists have disclosed the structure of nature with increasing clarity, the architect has discovered valid meaning in the dependence of form upon function and the appropriateness of the materials associated with both.

   The strict geometric lines characteristic of modern architecture appeal to a society in which mathematics has become so influential. The economic convenience of standardized mass produced units encourages simplicity even severity in appearance. The rapid changes in technical facilities demand continuous social adjustments which, in turn, invite flexible, rather than fixed arrangements of space. The once protective, solid cloak of the wall yields to a translucent or transparent skin which for visual purposes brings the outdoors and indoors together as one continuous space. Modern man is no longer afraid of nature but controls it more and more through lighting, heating, air conditioning and other technological devices.

   In the last half century four great architects have dominated the architectural landscape Walter Gropius, Le Corbusier, Mies van der Rohe, Frank Lloyd Wright.

RELATED MATERIALS:

Project CUE films:
- Frank Lloyd Wright
- Skyscraper
- Chartres Cathedral

Other films:
- Brasilia, International Film Bureau--26 min., Color.
- A Place to Live, Guggenhiem, St. Louis, Missouri
- Cantilever Bridge, U.S. Steel Association Films (free)

Filmstrips:
- A is for Architecture
- Life -- Four Great Churches

Magazine article:
- "Vistas for the Future," Time Mag., Sept. 6, 1963

TEACHER REFERENCE:

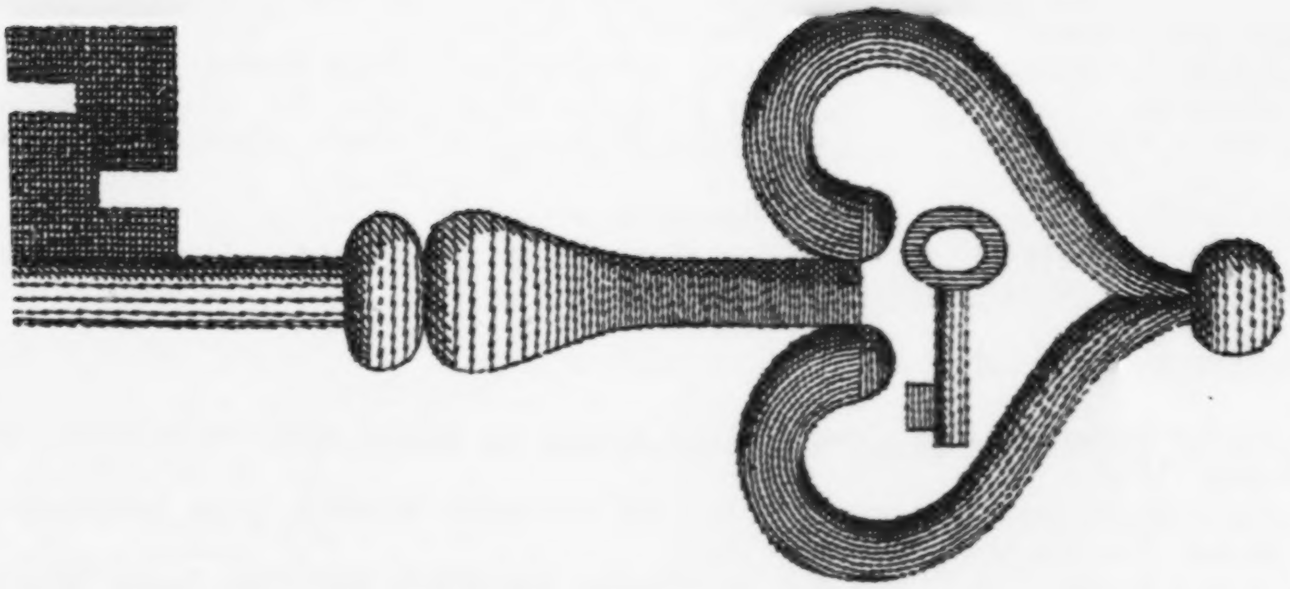
Pioneers of Modern Design from William Morris to Walter Gropius Nicolaus Pevsner--Doubleday--1958.
The Architecture of America; A Social and Cultural History, John Burchard--Albert Bush Brown--Little Brown--Boston 1961.
Frank Lloyd Wright; Writings and Buildings, paperback Meridian Books MG22 Mer

STUDENT REFERENCE:

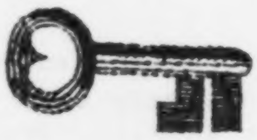
"Architecture in South America" - Craft Horizons, October-November 1963. In Project CUE Industrial Arts Package.
"Structure and Forms" - In Project CUE Industrial Arts Package.

SUGGESTED RELATED ACTIVITIES:

- (Industrial Arts) In the study of inventions and processes point out how these advances enable new types of structures to be built.
- Interested students may wish to make drawings or models of various types of architecture around the world or illustrate the development of architecture in time.
- Some students may wish to study a particular style such as the Greek or a special building such as the Parthenon, the architecture of which has held the admiration of men throughout time.
- Some students may wish to learn the stories about famous structures such as the Pyramids, Hanging Gardens or the Taj Mahal.
- Some students may wish to read about famous architects and gather and display photographs of their work.
- The class may wish to visit contemporary or other styles of buildings in their community.
- A local architect may be persuaded to talk to an especially interested group.



CULTURAL ITEM: CUE INSIGHTS -"ART AND THE COMMUNITY"



PURPOSES:

To assist students to become aware that art is increasingly necessary in the life of the individual.

To awaken students to the fact that art is a unifying factor in the development of a well balanced society.

To increase his awareness of the beauty or lack of it in his surroundings and to help him realize that art is an important part of daily life.

SUGGESTED AREAS OF USE: Industrial Arts

These materials and activities are suggestions for achieving the above aims and insights listed below. Many are supplied by CUE.

MEDIA:

Films: Lewis Mumford on The City - Six films on The City in History - Its Origins, Transformations and Its Prospect - National Film Board, black and white, 28 minutes each.

"Skyscraper" - CUE
"A Place to Live" - Charles R. Guggenheim Association - 20 min., color.
"The City" - Modern Museum of Art.
"Mood of Three Cities" - Ideal Pictures (free) 30 minutes, color.
"Frank Lloyd Wright" - CUE
"Let's Keep America Beautiful" - (CUE) 15 minutes, color.
"A is for Architecture" - (CUE) 30 minutes, color.

Books and Periodicals:

Albany Mall Plan - Project CUE - Industrial Arts Kit
Craft Horizons Magazine - Project CUE - Industrial Arts Kit - October 1963
The Story of the Utopias - Lewis Mumford
Space, Time and Architecture - Siegfried Gideon

SUGGESTED PROCEDURE:

(NOTE: Many activities are suggested here, the teacher will select those most suitable for his group.)

Discuss with the class: What do we mean by "art?" Where is art found in our daily life? at school? in the neighborhood? the city?

Invite an architect, artist, city planner or the teacher may show slides of art in the community on architecture, sculpture, handicrafts, machine made forms.

Invite local painter, sculptor or designer to talk to the class about how his work functions in contemporary society.

Discuss: What is beautiful in our environment? neighborhood? city? What needs improvement in these areas?

Collect and discuss material on housing projects. Discuss what happened when many slum dwellers were brought to new housing projects. Point out that it is necessary to educate people to an awareness of the importance of beauty and cleanliness in their surroundings for both physical and mental health. (Show anti-litter film "Let's Keep America Beautiful.") (CUE)

Prepare bulletin board material on city planning in this country, Europe and South America. Utilize flat pictures of government buildings, factories, employees' houses, parks, bridges and waterways.

Some students may visit urban renewal area sites of new construction or community housing developments. Others may wish to make a study of buildings that interest them, homes, churches, banks, theatres, and stadiums. After these visits discuss these questions:

- How does art function in their plan and design?
- How could they be improved?
- How are social, individual or esthetic needs satisfied in the plan?

Read reports on articles in the news on new art contributions to your community. Make a bulletin board display of these pictures.

Study modern window displays. Discuss: What contribution do shops make through their interior design and window arrangement? Arrange a school showcase.

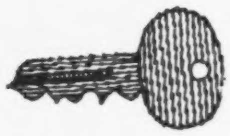
Study billboard advertising in your community. Does it beautify or detract? Which would you eliminate or redesign?

Study lighting fixtures in homes, stores, and streets.

Learn about what local artists do.

Plan an exhibit to interpret city life to the school.

Select some part of your school to decorate or enrich.



Find out about art contributions of other countries to your community.

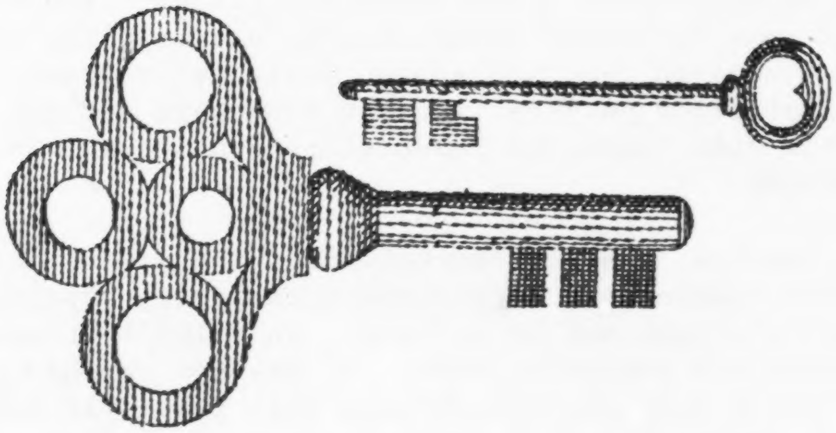
Industrial arts students may wish to plan and build a model community. Some students may wish to sketch or photograph aspects of their community which they consider to have outstanding art qualities. The creative teacher will think of many other related activities. The ultimate benefit of such activities will largely depend upon how many of the following insights are gained by the student.

INSIGHTS - which should be:

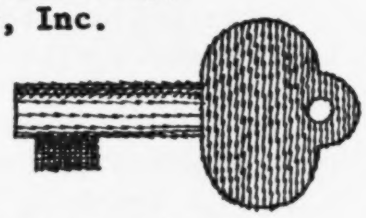
- Art is re-establishing itself as a unifying factor in the development of a balanced society.
- In early colonial days life was so hazardous and difficult that little time was left for the pursuit of the arts.
- The early colonists brought with them the bare necessities for living, with particularly treasured possessions to satisfy their love of beauty. They also brought skills and knowledges of the arts and crafts essential to homemaking.
- In many of the early American forms (dwellings, community plans, furniture, textiles, ceramics, and silver) we find foundations of good design and appropriate use of materials.
- Succeeding generations sometimes failed to consider these forms for their esthetic values because of the changes in community living and in processes of production. Attention was focused on superficial extrinsic values and on adopted styles of other cultures.
- Time has brought about a re-evaluation of artistic developments in relation to those of science and democracy.

- Economic and social changes have focused attention on the artist and his contributions toward affecting a more balanced and cultured society.
- We possess rich traditions in our handicrafts. Studies in this area build standards which make the young people in a community more discriminating consumers, capable of distinguishing between the practical and the beautiful as opposed to the stereotyped or the inefficient.
- Art is becoming increasingly necessary in the life of the individual. There is growing evidence of this to be found in the design of home products, the human factor in industrial design, the quest for rewarding leisure time pursuits, and a growing awareness of the emotions and their role in our mental equilibrium.

Because of intense preoccupation with industrialization and concentration of wealth among a small group, great art tended to be a private luxury enjoyed only by the elite. Today because of increased education, more leisure, greater division of wealth, improved transportation and communication, art is once more assuming its public role as a privilege and right for the enjoyment and uplift of all citizens.



CULTURAL ITEM: "ART AND CRAFT-CERAMIC ART THROUGH THE AGES" (Filmstrip)
58 frames, Color, Encyclopedia Britannica Films, Inc.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To provide students with vivid examples of the development of ceramics through the ages in the history of man.

To acquaint students with designs, materials and techniques applicable in creating ceramic ware.

SYNOPSIS:

Ceramics is one of the oldest crafts and industries known to man. It has been part of his everyday life since the unrecorded discovery that certain earthy materials can be shaped and then changed by fire to relatively lasting pottery.

It became an art with the ancients. If a culture had developed pottery to a degree where its form was functional, beautiful and well-designed, its decoration was varied and refined, its production utilized the potter's wheel and the exacting principles of glazing and firing, then indeed ceramics became a measure of that culture's degree of civilization. So it was with the ancient Egyptians, Persians, Greeks and Romans. Much of what we now know of the life of those people had been recorded as decoration on their pottery now being unearthed by archeologists.

The ancient Egyptians had so developed the art of ceramics that most of the basic processes were known to them. Other cultures refined these processes and found new ways to use the basic materials. The Chinese contributed porcelain and beautiful glazes. The Italians in the Renaissance developed enameled ware and majolica ware. The French and Spanish created exacting and delicate decorations. The Dutch provided beautiful Delft pottery. German stoneware and the English Wedgwood, together with ingenious production techniques, made pottery available to the masses.

In America, long before Columbus, the Aztecs and the Incas produced polished bisque-ware considered technically superior even to that of the Greeks, although not as refined. In Colonial times, American pottery was heavy and somewhat crude. It has now reached a design and technical level based upon mass production that places it among the best in the world. Research has found new uses never before imagined.

Pottery is therefore synonymous with civilized history. It has esthetic, artistic and practical qualities. Man has always treasured it as one of the finest forms of artistic expression. In a sense, pottery is culture.

SUGGESTED PREPARATION OF THE CLASS:

Ceramics lends itself to an exciting and practical approach to a study of an industry, art and craft as old as man and all his cultures. The following are suggested for student inspiration:

- The filmstrip may be used as an introduction to a unit in ceramics. It will motivate the student and give him a sound basic historical and technical foundation upon which future lessons will build.
- Prepare a bulletin board of pictures depicting ancient artisans at work and good examples of their work, (e.g., Life Series: History of Man).
- Prepare a display of ceramic ware using the materials and techniques emphasized in the filmstrip.

PUPILS SHOULD LOOK AND LISTEN FOR:

- The method of discovery that heat transforms (vitrifies) clay.
- Examples of primitive pottery, its method of manufacture and decoration.
- The way in which pottery can help us learn about life in ancient times.
- The development, composition and use of glazes.
- The advantages of the potter's wheel.
- The artistic expression, esthetic qualities, geometric perfection, and master craftmanship of Greek pottery.
- The Romans' use of molds to develop mass production techniques.
- The hand methods of the Aztecs, Incas and other American Indians.
- The ceramic techniques developed by artist-craftsmen in highly competitive nations after the Renaissance.
- The advent of mechanization and its effect on ceramic ware.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

1. To check on learnings from the filmstrip, discuss with the class:
    - Why is clay the easiest of materials to shape?
    - Why are ceramic ware and glass common to nearly all cultures on earth?
    - Have we been able to improve upon the fundamental processes known to the ancient Egyptians?
    - How did the ancient potter express himself and his culture in his work?
    - How does ceramic art of today differ from that of ancient cultures?
    - What effect has machine fabrication had upon the availability of fine ware to all people?
    - Has the use of ceramics been developed to its fullest? Can further improvements or developments be brought about?
2. Visit a local ceramic plant, or the workshop of a craftsman, to observe the design and manufacture of ceramic ware.
3. Visit local museums having displays of ceramic ware or art.

SUGGESTED RELATED CREATIVE ACTIVITIES:

To further student appreciation of pottery and pottery making, have students experiment with basic ceramic materials to experience its plasticity, porosity, reaction to heat and color changes.

Have students experiment with the basic ceramic processes:

- . Shaping by hand: pinch, coil, slab construction, sculpture, throwing on a potter's wheel.
- . Shaping with a jigger.
- . Decoration of greenware; slip-trailing, incising, piercing, relief carving, sprigging, sgraffito.
- . Decoration of bisque ware: underglaze colors, underglaze crayons, decals.
- . Glazes: clear, colored, combinations.
- . Overglaze decoration: tints, lines, gilt, decals.

Encourage library research in depth into the development of the design, materials, techniques emphasized by the filmstrip: written research paper; display; oral report.

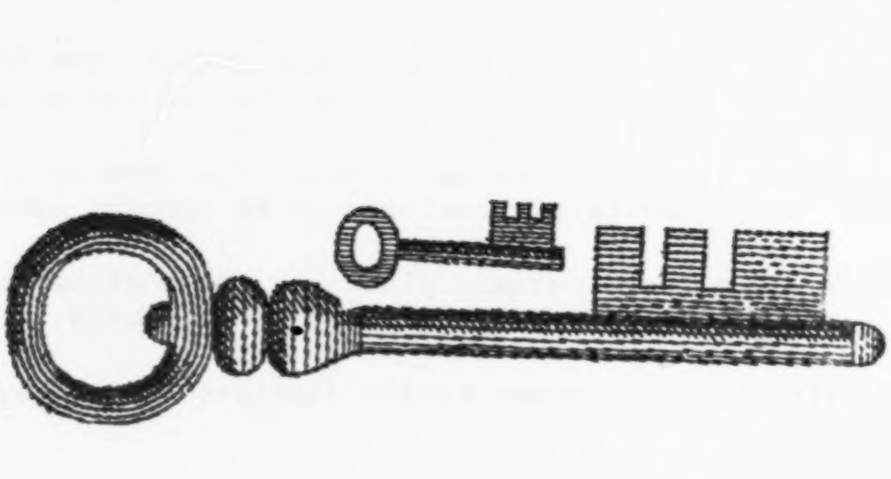
RELATED MATERIALS:

Films:

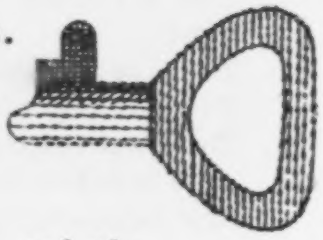
Glass and You. (Corning Glass Center)
Sealed in Glass. (Netherlands Consulate)

Filmstrip:

Making of Fine China. (Lenox China Co.) (N. Y. State Dept. of Commerce Film Library)



CULTURAL ITEM: "COLOURS IN CLAY" (Film)
12 min., Color, Encyclopedia Britannica Films.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To help students realize the relationship between nature and the work of the potter, and to increase understanding and appreciation of ceramics.

To show students how commercial pottery is manufactured.

SYNOPSIS:

This film shows how the craftsman takes a plentiful substance of the earth, clay, and transforms it into articles.

To the basic material, clay, additional ingredients such as sand, feldspar, marble and other materials are added to give body. When exposed to the high heat of the kiln, clay changes its physical nature, color and texture. When covered with glaze and fired again, it becomes waterproof and even more useful and permanent.

Modern technology has introduced production methods, such as slip casting and jiggering, that make possible the quantity manufacture of quality pottery. The craftsman who design the pottery, decorate it, and produce it have developed their skills to a high degree. Their work is based upon an understanding of clay and its possibilities. Each worker in the plant helps produce ware that expresses the culture, the people and the environment in which it was designed and produced.

SUGGESTED PREPARATION OF THE CLASS:

1. To increase understanding of the film's concepts, assist the class to understand that man's creations are inspired by his needs, in light of the materials available and his degree of technical skill.

2. To further motivate interest in ceramics, discuss a display you have set up of real pottery or photos of good pottery designs. Give some acquaintance with these technical terms:

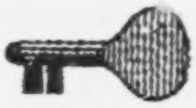
Bottle ovens
Pigment
Designer
Slip casting
Glaze
Moldmaker
Decal (prints)
Shrinkage
Firing (bisque and glost)
Ware
Burnishes
Potter's wheel
Engraving
Turner
Kiln (oven)

PUPILS SHOULD LOOK AND LISTEN FOR:

- How pottery is inspired by nature.
- How the hand of the potter forms the clay to the desired shape.
- The preparation of the clay.

- The accuracy and rapidity of the jiggering machine process of making cups.
- The use of molds in manufacturing pottery to accurate specifications.
- The firing of pottery.
- The decoration of pottery: creation of designs; preparation of decal; application of decoration.
- How science complements the skill of the craftsman.

PRESENT MEDIA.



SUGGESTED FOLLOW-UP ACTIVITIES:

To test for comprehension of the film's concepts, discuss these or similar questions:

- Why is ceramics considered the oldest art and industry of man?
- Why do archeologists say the history of man is written on clay?
- How does clay form through the weathering of thousands of years?
- How does a designer create his designs? How do the materials and forms of nature influence his creations?
- How has pottery been influenced by the hand of the potter? By machinery?
- What are the purposes and properties of glaze?
- What effect has electricity had upon the ceramic industry?

SUGGESTED RELATED ACTIVITIES:

The following suggestions may inspire students to further investigate the ceramic industries of today:

- The film may be used in a ceramics unit to introduce the production of pottery using modern methods of design and manufacture. Demonstrations in mold making, slip-casting, jiggering, glazing and decoration might follow.
- Prepare bulletin board displays of good ceramic pottery designs and continually revise them. Have students duplicate and re-design them, and create new forms and decorations.
- Prepare displays to enrich student understanding of ceramic design, clays, glazes and processes.
- To increase interest of all students in the school in ceramics, place finished student works in corridor display cases.
- Visit a factory and observe actual design and manufacture of pottery. Visit retailers of factory outlets having good displays of ceramic ware. Encourage library research into the development of ceramic design, materials and processes. Present findings as a display, oral report or written research paper.

SUGGESTED RELATED CREATIVE ACTIVITIES:

Since depth of understanding and appreciation come only from experience, have students use the film's production methods in:

- . Ceramic design - function, form and decoration.
- . Preparing clay - mixing ingredients (blunger), de-airing (pug mill or wedging).
- . Production - slip casting, jiggering, throwing, sprigging, decorating and glazing.
- . Firing - bisque, glost (glaze).

RELATED MATERIALS:

Film:

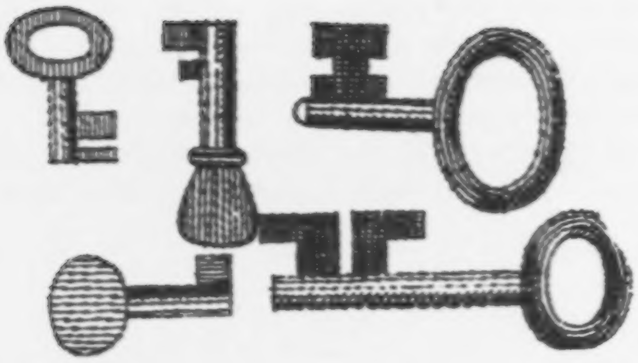
The Making of Fine China. (Lenox China Co.)

Filmstrip:

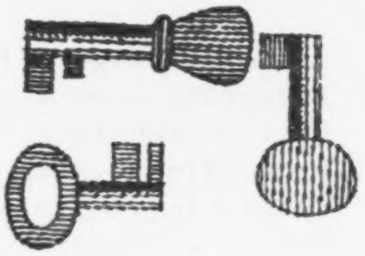
Arts and Crafts-Ceramic Arts. (Encyclopedia Britannica) (CUE)

Booklet:

Woman's Day Dictionary of Ceramics. (CUE Home Economics Kit)



CULTURAL ITEM: "GLASS AND YOU" (Film)
Corning Glass Works
15 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the origin and history of glass.

To assist students in comprehending the utilitarian and esthetic possibilities of glass in commerce, industry and the home.

SYNOPSIS:

The story of glass goes back further than the formation of the earth itself. During the formation of the earth, natural glass called obsidian was made by volcanic action. Prehistoric man found it, and chipped it into tools, vessels and mirrors. Quite by accident, man found out how to make glass himself. Long and very slow development of glass was mostly carried out by artisans who made glass items painstakingly, one at a time. The Romans learned how to use the blowpipe and molds to reproduce glassware of very good quality in enough quanities that glass became commonplace in the homes of those who could afford it.

Twentieth Century technology has made possible tremendous advances in the development of glass. The machine and its accompanying technology have made glass so common and ever-present in our daily lives that we take it for granted. Hand-crafted glassware and crystal are still available in even better quality than in days gone by, because of improved materials, equipment and processes. An example of this is Steuben glassware.

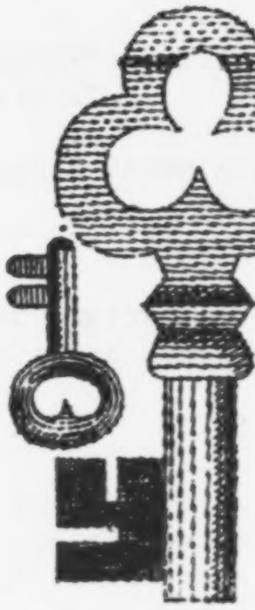
This film presents the historical and modern story of glass and its manufacture. It serves as an excellent introduction to a unit on glass as a major segment of the ceramic industry.

SUGGESTED PREPARATION OF THE CLASS:

This film can be well supplemented by the booklets on glass provided by the Project CUE packet. In addition, the following suggestions are offered to motivate students toward a study of glass:

- Obtain and display samples of blown glass.
- Display raw materials used to manufacture glass.
- Display samples of as many different uses of glass as possible. Use actual samples or pictures or photo-copies.
- Display pictures or photo-copies of old and modern glass manufacturing processes to motivate interest. Discuss with the class.

PUPILS SHOULD LOOK AND LISTEN FOR:



- The first natural glass.
- The early production of glass in Egypt and Rome.
- Steuben glassware and crystal.
- The production of glass today.
- Industrial and scientific use of glass.
- Use of glass in the home.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- Discovery and use of obsidian.
- Production and use of glass by ancient civilizations.
- Manufacture of glass by hand craftsman.
- Manufacture of glass by the machine.
- Contemporary uses of glass by our culture.

SUGGESTED RELATED ACTIVITIES:

- Utilize the samples you have on hand to explain to students the various kinds of glass processes, such as cut glass, engraving, intaglio, etching, printing, sandblasting, painting, enameling and guilding.
- Use the "Craft Horizon" booklet on Stained Glass (CUE Kit) to acquaint students with use of glass as an architectural element.
- Visit a local glass manufacturing industry.
- Visit a local museum displaying glass collections, both artistic and industrial.
- Invite a glass designer, engineer or craftsman as a guest speaker.
- Have students conduct library research into the origin and the development of specific types of glass, such as Venetian or Orrefors. Present as a display, oral report and written report.
- Present demonstrations in and require student application of and experimentation with the following:

Glass cutting
Glass sagging
Glass casting
Glass blowing
Glass decorating (stain, enamel)
Glazing pottery

- Require student originality in the designing and making of glass projects.

RELATED MATERIALS:

Film: "Sealed in Glass" - Netherlands Consulate
"Engineering with Glass" - CUE

Filmstrip: "Art and Craft - Ceramic Art Through the Ages"
Encyclopedia Brittanica Films, Inc. (Project CUE)
58 frames, Color.

CULTURAL ITEM: "PETER AND THE POTTER: (Film)
21 min., Color, Contemporary Films.

CURRICULUM AREA: Industrial Arts.

PURPOSES:

To demonstrate basic procedures in the production of ceramics and provide a basis for appreciation of ceramics.

SYNOPSIS:

The creative art of hand-crafted pottery combines the potter's skills, age-old techniques, and a certain element of chance. The result not only meets a definite functional need but also enhances its surroundings with its beauty.

This film tells of a young boy, Peter, who is searching for a birthday gift for his mother. He stumbles upon the workshop of a talented family of potters. They create and decorate a ceramic bowl for him. The skill of the potter is evident as he throws several pieces upon the potter's wheel. The viewer accompanies Peter through the processes of decorating, glazing and firing, until the finished ware is finally presented to his mother. Although the high school student will not care to identify with the young Peter, the pottery processes are excellent and well demonstrated.

The film, in vivid color, presents very simply the manufacturing process for ceramic ware. The critical firing of ceramic ware is accompanied by the suspense and excietment of every potter as he unloads the fired ware from the kiln.

SUGGESTED PREPARATION OF THE CLASS:

Ceramic pottery is one of man's oldest arts and industries. Industrial processes are involved in production of much pottery today, but knowledge of basic beginnings is essential. To give students a background for appreciation, and to arouse interest:

- Prepare bulletin board displays of well-designed, well-constructed pottery using pictures or photo-copies. (House Beautiful Magazine).
- Display well-designed ceramic ware (actual pottery).

Note: For a vivid introduction to ceramics, use this film after the filmstrip "Art and Crafts-Ceramic Art." This would be followed by the film "Colour in Clay," when appropriate, to show how hand skills have been supplemented by machinery. The filmstrip would be followed by demonstrations in ceramic design, and the films by demonstrations in the pottery hand and machine processes.

KEY WORDS:

Potter
Potter's wheel
Clay
Firing (baking)
Glaze
Kiln

PUPILS SHOULD LOOK AND LISTEN FOR:

- Tools and materials used by the potters.
- The potter's use of hands and feet while throwing on the potter's wheel.
- Colors, patterns, and textures of nature evident in the film.
- The skill of the potter and his wife.
- The importance of careful timing in firing and glazing.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure that comprehension is complete, discuss:

- What happens when the clay bowl is fired for the first time?
- What is the purpose of glaze?
- How and why is ceramic ware decorated?
- Nature's influence upon the potter's creativity in design and materials.
- Would the potter derive satisfaction from creating clay objects by hand?
- Why must the clay bowl dry and harden before firing?
- How can a person develop the skill and sureness of the potter?

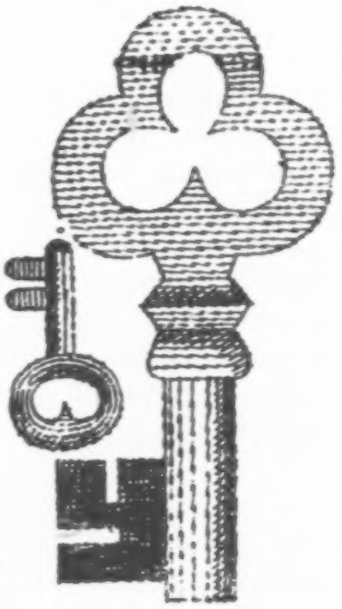
SUGGESTED RELATED ACTIVITIES:

- Encourage students to visit local stores to view pottery made commercially by hand and machinery.
- Encourage library research on pottery's development in man's history. Present results as oral and written reports, and displays.

SUGGESTED RELATED CREATIVE ACTIVITIES:

Plan and make a ceramic bowl:

Throw on the potter's wheel.
Coil construction.
Dry completely.
Decorate with underglaze colors or chalk.
Bisque fire in kiln.
Glaze by dipping or brushing.
Glost fire ware in kiln.



RELATED MATERIALS:

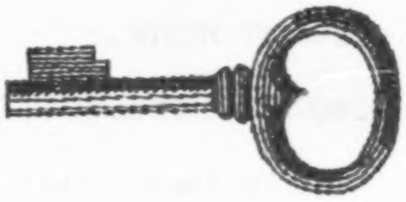
Films:

Color in Clay. (Encyclopedia Britannica Films) (CUE)
Clay in Action. (Encyclopedia Britannica Films)

Filmstrip:

Arts and Crafts-Ceramic Art. (Encyclopedia Britannica Films) (CUE)

CULTURAL ITEM: "THIS IS GLASS" (Booklet)
Corning Glass Works, Corning, New York
"ROMANCE OF GLASS" (Booklet)
Pittsburgh Plate Glass Co., Pittsburgh, Pennsylvannia
"CRAFT HORIZONS" (Booklet)
November, December 1960, Volum XX, no. 6, pp 23-25,28 - 33, 39-41.
"CORNING GLASS CENTER" (Book)
Corning Glass Works, Corning, New York



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the discovery, development and use of glass.

To assist students in understanding the functional and esthetic qualities of glass.

To acquaint students with the art, craft and industrial application of glass.

SYNOPSIS:

Glass has proved to be one of man's most versatile materials, yet it took him thousands of years to recognize its possibilities. Most advances in glassmaking have envolved in the 20th Century. Early man used obsidian, a crude natural glass created by volcanic action. It could be used as a weapon, jewelry, vessels and, when polished, became a looking glass. The early Egyptians and Syrians were artists in the use of obsidian.

The exact discovery of glassmaking is unknown. Ancient historians such as the Roman,Pliny claimed it was an accidental discovery of the Phoenicians. At first the glass was used to glaze and decorate pottery and beads. The Egyptians learned to color glass and created jewelry valued as highly as precious metals. Glassmaking raised the Egyptian economy to great heights. Phoenician traders carried glass to all parts of the Mediterranean world. Other countries began to experiment with the new material. The Greeks did develop a minor glass industry but glass artistry never gained much status. About 300 B.C., a Phoenician discovered the blow-pipe, and glass blowing became a production technique. Items that had taken hours to make could be produced in minutes.

The Romans were the first to really develop the art of glassmaking. They developed the earliest window glass, produced a fairly clear mixture, and used the technique of blowing glass into molds. Now the quality and the quantity of glass was greatly increased. Some Roman colored glass urns and cameo glass urns have survived to become priceless objects fo art.

Byzantium became the capital of the glass industry after the fall of Rome. Here developed the window glass known as Crown glass which was used until the 19th century. The greatest contribution of the Byzantine artisans was an esthetic one. They developed a color artistry in glass that produced the magnificent stained glass windows of the great cathedrals in Europe. To these artisans glass was as a canvas is to a painter, it was to be colored, enameled and carved.

The intrinsic beauty of glass was first developed by the Venetian glass blowers in the 15th century. They fabricated intricate glassware that has never been duplicated. They also developed a glass called "cristello" which was colorless and transparent. Now glassware achieved beauty through the craftsman's techinque and didn't depend upon decoration. Cristello also allowed the making of lenses which led to the development of spectacles, telescopes and microscopes.

Now began an era of experimentation which led up to the great and varied glass industries of today. The great advances in the development of glass have been in the 20th century.

This portfolio on glass includes a great deal of pictorial material and its accompanying text on the history, development and use of glass. It stresses the use of glass as an art, craft, and its industrial applications. It can be used as reading material, as displays, or for instruction by using on an opaque projector.

SUGGESTED PREPARATION OF THE CLASS:

Glass has always been valued for its utilitarian and esthetic qualities. The following are suggested to create student interest in glass as both art and industry:

- Display samples of blown glass and of mass-produced glassware.
- Prepare a display of pictures or photo-copies of the manufacturing processes in glass-making.
- Have students list items of glass found in their homes. Discuss their manufacture.
- Have the students locate and observe good examples of stained glass windows. Discuss with the class.

PUPILS SHOULD LOOK AND LISTEN FOR:

- The history and development of glass.
- Types, uses and properties of glass.
- Methods of glassmaking - blowing, pressing, molding spinning, drawing, finishing.
- Glass as an art medium in crystal, stained glass, other forms.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

1. To review learnings discuss:

- The discovery of glass.
- Raw materials used in glass-making.
- Egyptian and Syrian glass-making.
- Roman development of the glass industry.
- Renaissance glass-making.
- Twentieth Century glass-making and production methods.
- Glass as an art medium. Show the book "Poetry and Crystal" for Steuben works of art (CUE English Kit).
- Types and properties of glass.
- Current uses of glass.

2. To help students realize the future possibilities and importance of glass, point out that by 2000 A.D. our earth may have a population of six billion. Such a population will bring earth's fossil, forest and mineral reserves to a dangerously low level. Survival will become increasingly dependent upon the creative genius of science and research. Glass may play an increasingly vital role in meeting this challenge, as it can provide materials for housing and clothing, and an important part of many inventions and products.

   - Visit a local glass industry, glassware shop, or museum displaying glassware created by ancient or pre-industrial artisans.

   - Demonstrate and encourage student application and experimentation in:

     Glass-cutting
     Glass sagging
     Glass casting
     Glass blowing
     Glass decorating (stain,enamel)
     Glazing pottery

SUGGESTED RELATED CREATIVE ACTIVITIES:

- Require student originality in the designing and making of glass projects.

- Have pupils do research on the future of glass and write about or draw inventions for the future involving glass.

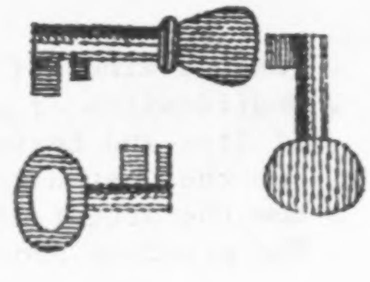
RELATED MATERIALS:

Film:

Glass and You. (Department of Commerce, State of New York, Albany, New York)

Filmstrip:

Art and Craft - Ceramic Art Through the Ages. (Encyclopedia Britannic Films)



CULTURAL ITEM: "ART IN WOODCUT" (Film)
18 min., Color, Franciscan Films.

CURRICULUM AREA: Industrial Arts - Printmaking.

PURPOSES:

To demonstrate the art of the woodcut and provide a basis for appreciation of the print-making medium.

SYNOPSIS:

In this fine film, Jacob Steinhardt, one of the greatest woodcut artists of our time, shows how he created his famous woodcut, "Street With Trees."

Durer in 16th Century Europe, and Japanese artists as well, drew their woodcut designs with ink, and gave them to craftsmen who reproduced the ink drawing on wood. The result is rather like an ink drawing and lacks the force of direct carving done by the craftsman.

This film displays tools and methods of cutting, and the woodcut itself, from sketch to finished print. It also gives fine insight into the artistic creativity, technique and ideas of an outstanding artist.

SUGGESTED PREPARATION OF THE CLASS:

This film would serve as a fine introduction to a unit on printmaking. One of the earliest ways of printing was the use of carved wooden blocks, which were inked and printed. Playing cards and book illustrations, even for the Bible, were printed this way.

Display Prints 116, 117, 118, 119 from Metropolitan Seminar, Portfolio 10. Display Print 117 - St. Christopher and St. John the Baptist. Explain that the woodblock print dates from about 1400. Discovering this process of reproduction was a momentous development in western civilization. It made the first printing possible.

Display Print 118 and 119. Although these Japanese prints of the 17th and 18th century are beautiful reproductions of line, they look more like water-colored line drawings.

Display Print 116. In this woodcut Gauguin is utilizing the character of the wood as part of his design.

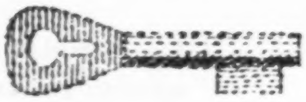
Explain that the film will show how a modern artist uses the print-making medium.

PUPILS SHOULD LOOK AND LISTEN FOR:

- The difference between the reproduced ink drawing type woodblock and the more expressive force of the direct carving method.

- Various kinds of tools used.
- Modification of pressures and other techniques used to achieve variety of line and texture.
- How the sketch is transferred to the wood.
- How the artist creates as he cuts.
- The proofing process.

PRESENT MEDIA.



SUGGESTED FOLLOW-UP ACTIVITIES:

Explain to students that many artists today take a different approach to woodcutting by making the grain of the wood part of the design. Their method is as follows:

- Make a rubbing of the woodblock.
- Allow the design of the grain to suggest the design for the cut.
- Incorporate the grain configurations and texture of the wood as part of the design.

Have on hand a variety of print-making media for student inspection - linoleum blocks, gouges, cherry wood, inner tube, string, brayers, glass and others. Encourage students to experiment with the media. Students might make: lino prints; woodcuts.

Note: Although the following give some of the printing experience, they do not incorporate the important aspects of handling of gouges and getting the feel of the material.

- Inner tube or cardboard prints (cut-out sections affixed to cardboard, ink and print).
- Brayer prints.
- Mono prints. Paint on glass and pull a print from it or place paper on inked glass and draw on the back of the paper.
- String prints. Dip string in ink or paint. Let it fall on surface of paper. Place another paper over the top and press. Pull out string while paper is under pressure.
- Tin can prints. Wrap string around tin cans. Roll in ink and print by rolling over paper.
- Duco prints. Dribble design on with quick hardening cement which leaves a raised surface. Ink and print. Add pieces of tarleton to secure half-tone-effect greys.
- Use rice paper to make rubbings from stone or metal designs.

SUGGESTED RELATED ACTIVITIES:

1. Display the Pictorial History of Music Printing, (CUE Industrial Arts Kit). Explain the difficulties of music printing which used to be done with woodcuts and engravings; Explain newer methods of music printing.

2. Use CUE Insights, "The Book" to acquaint students further with use of woodblock in printing.

3. Show CUE films - "Color on a Stone," "The Modern Lithographer" and "Photolithography" to learn about this print process.

RELATED MATERIALS:

Films:

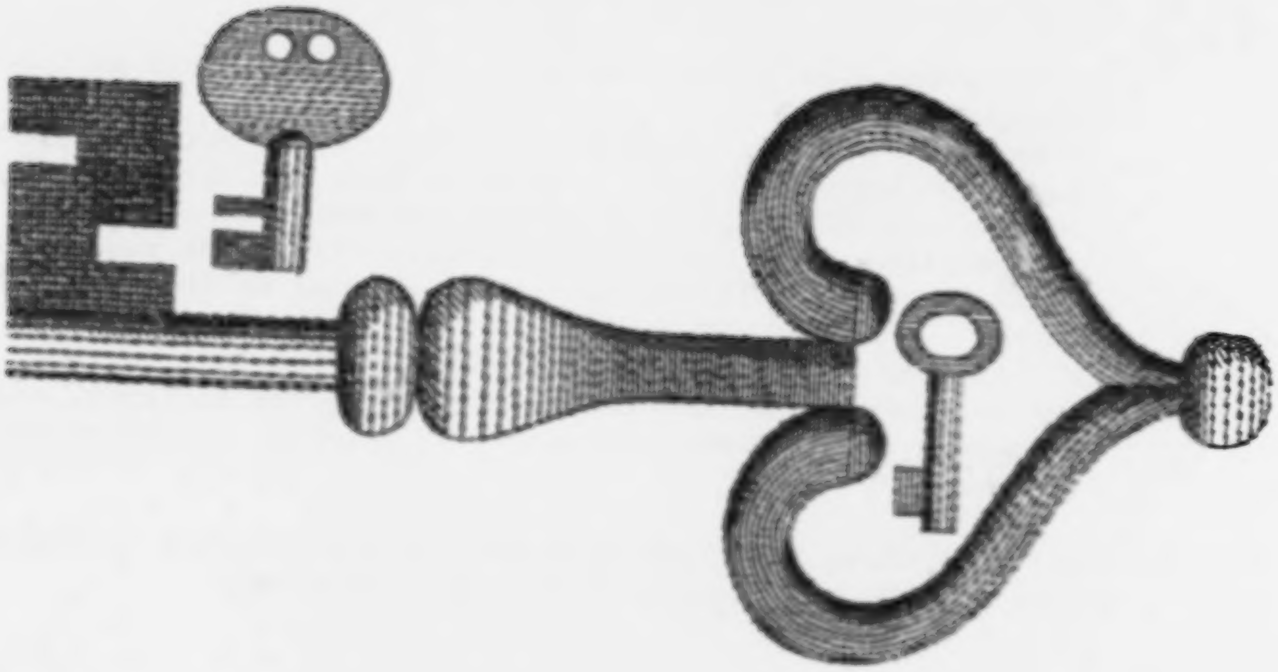
Techniques of Silk Screen Printing. (Pictura Artists Proof -Printmaking - Contemporary Films)

Books:

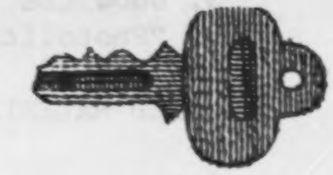
CUE Insights - The Book
The Book - Douglas McMurtrie

Periodical:

Pictorial History of Music Printing. (Selmer Bandwagon, Vol. 11, No. 4, October, 1963)



CULTURAL ITEM: "ART IS NOT AN END IN ITSELF, BUT A MEANS OF ADDRESSING HUMANITY" (Pamphlet)
Amalgamated Lithographers of America, New York Times, 30 September 1962, Section 11.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the origin and development of lithography.

To present the process of modern color lithography.

SYNOPSIS:

Graphic arts have profited by the advent of modern technology to the extent that not only have they become a vast industry, but a perpetuator of art, design, and words. This is especially so in the case of lithography.

This booklet is itself a fine example of the gravure process and of full color lithography. Its text, as vivid as its samples of lithography, is presenting the discovery and the development of lithography. Of special significance is the series of photographs and accompanying text explaining in detail modern lithography. This process now produces at low cost and great quality the artistic precision once possible only by expensive hand press reproduction of fine art.

SUGGESTED PREPARATION OF THE CLASS:

The craftsmanship and versatility of lithography are often taken for granted merely because of a lack of understanding of the process. The following methods of introducing students to this major printing process through the booklet are suggested:

1. Discuss the three major printing processes:

   . Letterpress - printing from a raised surface, such as type or plates.
   . Gravure - the opposite of letterpress. It is printing from an image cut into a surface, such as etching or engraving, where ink remains in the grooves after it has been removed from the surface of the plate. The ink is then transferred to the paper under pressure by being lifted out of the grooves as it adheres to the paper.
   . Lithography - printing from a flat or cylindrical surface. The ink is picked up by the grease-or ink-bearing surfaces, while the remainder of the plate is covered by water or a non-ink-bearing surface.

2. Use this booklet, together with the Project CUE film "Color on a Stone," to explain the basic process of color lithography.

3. View and discuss plates 116, 117, 119, and 120 of portfolio 10 and plate 60 in portfolio 5 of the Metropolitan Seminars in Art as samples of lithographic prints.

KEY WORDS:

Etching
Gravure
Intensity
Letterpress
Lithography
Negative
Photography
Plate
Offset

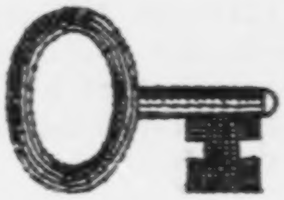
PUPILS SHOULD LOOK AND LISTEN FOR:

. Functional use of art work.
. Lithography as a means of communication.
. The relationship of photography and lithography.
. The modern process of lithography.
. Color lithography of Toulouse Lautrec and of Picasso as an art medium.
. Color lithography of modern industry as functional art.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:



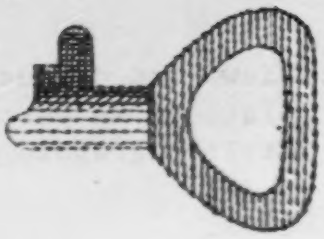
. Lithography as a commercial process.
. Lithography as an art medium.
. The making of a lithograph, old and new methods.
. Uses of lithography today.
. Possibilities of lithography in the future.
. Design and artwork necessary in modern lithography.

SUGGESTED RELATED ACTIVITIES:

. Collect samples of lithography and prepare a display.
. Visit a local printing establishment using the lithographic process to observe its preparation and its use.
. View and discuss the lithographic reproductions of the National Art Gallery as provided by Project CUE.
. Have students conduct library research on the discovery and development of lithography to amplify what is in the booklet. Present as a display, oral report and written report.
. Encourage students to list as many uses of lithography as they have come in contact with during a prescribed period of time (the past week). Have them list the number of colors used and analyze the design used.

RELATED MATERIALS:

Film:
Color on a Stone. (Bailey Films, Inc.) (CUE)
Booklet:
How to Prepare Artwork for Letterpress and for Lithography. (Kimberly-Clark Corp., Neenah, Wisconsin)



CULTURAL ITEM: "COLOR ON A STONE" (Film)
Bailey Films
13 minutes, Color.

CURRICULUM AREA: Arts - Graphic Arts, Lithography

PURPOSES:

To acquaint students with the principles of color lithography in its basic form.

To explain methods of visualization, transfer and simple registry necessary in all lithography.

SYNOPSIS:

Lithography gained its initial popularity as an art form and now has developed into a large and highly technical industry. The accidental discovery that oil and water do not mix provided the medium for Honore' Daumier's lithographs that affected the art and politics of Europe. Color was introduced by Toulouse Lautrec and provided the basis for modern lithography.

Although industry has substituted the metal plate for the stone and the camera for the hand of the artist, lithography has remained an art. As an important part of the graphic arts industry, lithography can bring economically to all people reproductions of the finest work of artists, photographers and designers.

This film presents the basic principles of lithography on a stone. It explains the procedure used by the artist in developing a color lithograph. This involves the visualization of the design, its transfer and simple registry. Included are excellent examples of the work of such artists as Paul Cezanne, Toulouse Lautrec, Pierre Auguste Renior, and some contemporary Americans.

SUGGESTED PREPARATION OF THE CLASS:

Secure New York Times booklet on Lithography (CUE Kit.) To arouse interest tell the class: Quirks of destiny are fascinating. The process of graphics reproduction which is changing the world of visual communications came into being from a laundry list. In 1798 Alois Senefelder wanted to be a playwright. He was so poor he decided to publish the plays himself. To do this he was experimenting with methods of relief etching on stone when his mother came in and needed a laundry list in a hurry. He wrote the list on the stone in reverse with black wax, wet the stone, rolled ink over it and printed it on paper. The result (lithography) was to change the world far more than his plays which were never printed.

Show Daumier and Lautrec prints in booklet and explain: French artists, Daumier, Delacroix and Toulouse Lautrec used this process; Daumier for political protest, Lautrec for posters, Delacroix for illustrations.

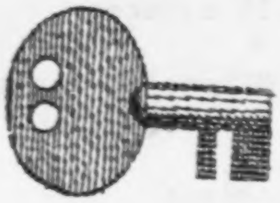
This film will show the process. (If possible have lithograph stone touchè, and grease crayon available) Demonstrate to show students oil and water do not mix.

KEY WORDS:

Carborundum
touche
Lithography
Luminosity
Vitality
Registry

PUPILS SHOULD LOOK AND LISTEN FOR:

- The work of the famous printmakers: Paul Cezanne, Toulouse Lautrec, Pierre Auguste Renoir.
- The basic steps in producing a multi-color lithograph.
- Preparation of the stone.
- Drawing of the design on the stone with touchè or grease crayon.
- Etching the surface.
- Printing the first color.
- The process involved in printing additional colors.



PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

1. To further understanding of lithography point out that modern photolithography evolved from this basic process shown in the film.

   - Utilize CUE booklet on lithography to explain photolithography (p. 7).
   - Show the art works by Goya, Lautrec and Picasso in the booklet.

   Discuss:

   - The process of color modern production lithography as used by industry.
   - How many color runs through the press are necessary.
   - How the basic theory that oil and water do not mix applies to lithography.
   - The qualities and expression of the artists in the lithographs shown.

   Ask:

   - Is the use of a stone practical in contemporary industrial lithography?

2. Display the International Paper "Impressions" folders (CUE Kit).

3. Show the Eastman Kodak film, "Photolithography."

SUGGESTED RELATED ACTIVITIES:

Secure Metropolitan Seminars Portfolio 10 to learn more about lithography as an art process and other printmaking.

SUGGESTED RELATED ACTIVITIES:

- Visit a local museum displaying lithographs.
- View and discuss the National Arts Gallery Lithographs of famous and valuable art work provided by Project CUE.
- Visit a local printing establishment using the lithography process to view its contemporary application.

- Encourage students to compile a collection of lithographs as found in magazines and evaluate each for artistic and technical quality.
- Have students conduct library research to discover the origin of lithography and its development as a graphic art. Present as a display, oral report or written report.
- Discuss the development of lithography to its present stage of technology.

RELATED MATERIALS:

Films:

"Modern Lithographer"
Encyclopedia Brittanica Films (CUE)
10 minutes.

"Photolithography"
Eastman Kodak

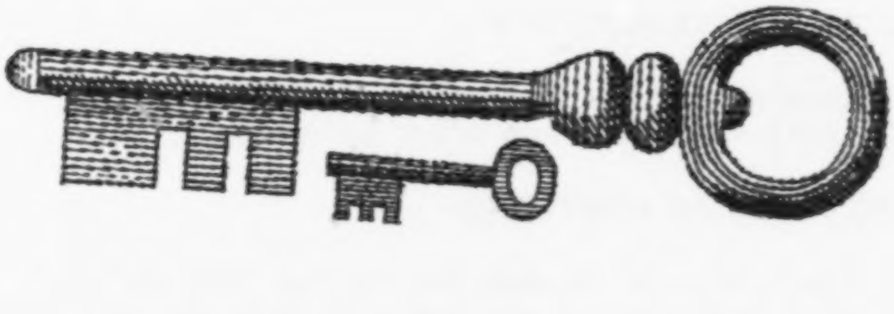
Booklets:

"How to Prepare Artwork for Letterpress and for Lithography"
Kimberly-Clark Corp.
Neenah, Wisconsin.

"Art is Not an End in Itself"
The New York Times, September 30, 1962
Section 11 (Project CUE)

Flat Pictures:

Toulouse Lautrec prints or posters (Project CUE).



CULTURAL ITEM: "PRINTING THROUGH THE AGES" (Film)
14 min., B&W, Encyclopedia Britannica Films

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the development of printing as a medium of communication and expression.

To evaluate the effect of movable metal type upon civilization.

To acquaint students with 20th Century innovations in the printing industry.

SYNOPSIS:

Printing as an industry is relatively new. There is evidence of its existence, primarily as an art or decorative form, during a long period of history before the invention of movable type. The use of a seal or signet ring in soft wax or clay is an example. The ancient Chinese and Japanese printed with ink on carved wooden blocks to create pictures. Traders carried the art to Europe where it was used primarily to decorate cloth with repetitive designs.

The Middle Ages and its accompanying lack of intellectual endeavor saw only the laborious hand copying of old manuscripts. Something new was needed. A German named Gutenberg developed the process of manufacturing and using movable metal type in a screw-and-pressure-plate printing press.

The industrial revolution, with its new materials and techniques, improved printing equipment until today we can produce type quickly and print books and magazines at almost unbelievable rates. Thus, printing has gone from the original slow hand methods to the high speed technology of today.

Printing has been a promoter of human progress. It spurred on all the arts of learning and therefore earned the title of "art preservative of all the arts."

> "And this our noble art of Printing is the very foster mother of all learning; for although the few had books before John Gutenberg gave us our art, not until Printing came could learning, yea and Wisdom also, knock at every man's door."
> From the Latin of Cardelius, 1546.

SUGGESTED PREPARATION OF THE CLASS:

To motivate the class, discuss the presence and need for printing in our daily lives:

1. Printing as an art and a craft is a daily part of our lives. Its very existence is the perpetuation of our civilization and insures the availability of knowledge to all people, not just a privileged few.

2. Prepare a display on Gutenberg and the development of movable metal type. (The Lionel Corporation has an excellent kit in model form.)

3. Discuss methods of graphic communication throughout history:

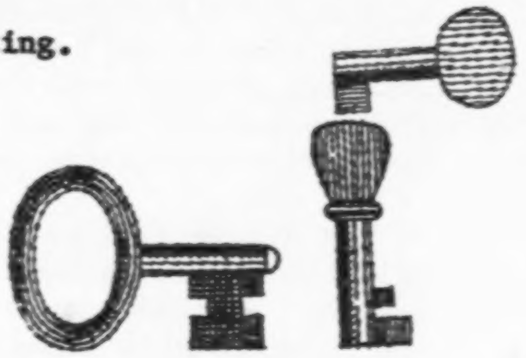
Cairns
Stone tablets
Clay tablets
Indian symbols
The alphabet
Egyptian hieroglyphics

KEY WORDS:

Cast iron
Hardened
Linotype
Matrix
Monotype
Type

PUPILS SHOULD LOOK AND LISTEN FOR:

- Simple methods of printing, using materials available in the home.
- Early methods of printing.
- Invention of movable metal type by Gutenberg.
- The old hand screw and platen printing press.
- Effect of the Industrial Revolution upon printing.
- The manufacture of printing paper.
- Modern type manufacturing methods.
- The development of type faces (letter forms).



PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with class:

- What were the limitations on early printing as performed by the Chinese, Japanese and Europeans?
- Why is printing considered a graphic art?
- The method utilized by Gutenberg to reproduce the Bible; its effect and significance.
- What were the limitations on the early press used by the printers? How was this press improved upon?
- How paper is produced by industry today.
- The following machines: Monotype, Linotype and Matrix casting.
- The capabilities of modern printing presses.

SUGGESTED RELATED ACTIVITIES:

- Visit a local newspaper or printing concern to observe the modern printing process in action.
- Visit local museums to view antique manuscripts or books on display.
- Encourage students to conduct library research on the development of printing and type faces. Present the results as: displays, oral reports and written reports.

SUGGESTED RELATED CREATIVE ACTIVITIES:

- Present demonstrations about and encourage student work and experimentation in the following: linoleum block printing, type and type cases, kinds and making of paper, and printing on the platen press.

RELATED MATERIALS:

Films:

Five Centuries of Type Founding. (free loan, Education Service Dept.) (American Type Founders, 200 Elnora Ave., Elizabeth, N. J.)
Story of Printing. (Encyclopedia Britannica Films)
Paper. Encyclopedia Britannica Films)

Booklets:

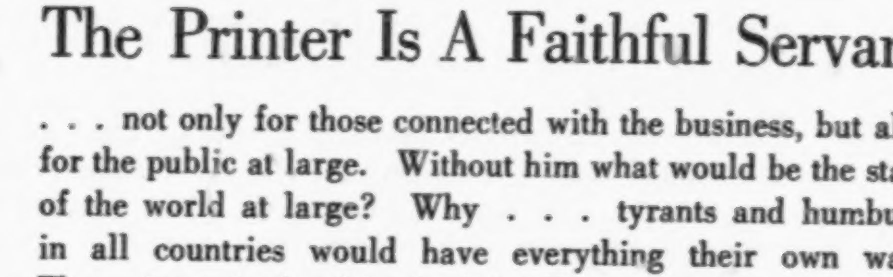
Fundamentals of Printing. (Kimberly-Clark Corp., Neenah, Wisconsin)
Type and Its Relation to Paper. (Kimberly-Clark Corp., Neenah, Wisc.)
Paper and the Graphic Arts. (Kimberly-Clark Corp., Neenah, Wisc.)

CUE Insights - The Book.

The Printer Is A Faithful Servant

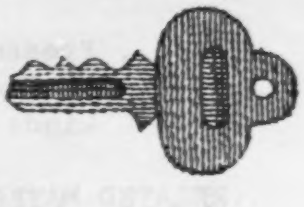
. . . not only for those connected with the business, but also for the public at large. Without him what would be the state of the world at large? Why . . . tyrants and humbugs in all countries would have everything their own way. The printer is the friend of intelligence and thought; the friend of liberty, of freedom, of law. Indeed the printer is the friend of every man who is the friend of order — the friend of every man that can read. Of all the inventions, of all the discoveries in science or art, of all the great results in the wonderful progress of mechanical energy and skill, the printer is the only product of civilization necessary to the existence of free men.

Charles Dickens



CULTURAL ITEM: "WRITING THROUGH THE AGES" (Film)
10 min., B & W, Encyclopedia Britannica Films.

CURRICULUM AREA: Industrial Arts



PURPOSES:

To acquaint students with the development of graphic symbols up to the alphabet.

To learn the methods of graphic representation prior to printing.

SYNOPSIS:

Some historians assert that the beginning of civilization dates from the invention of writing. The evolution of our alphabet made possible printing as we know it today. A study of the art of printing therefore requires a knowledge of the origin of the alphabet.

Primitive man used crude monuments of stone and marks or pictographs on cave walls and on skins. The Egyptian, Assyrians, and Chaldeans developed stone inscriptions to a high degree. The need for portable records brought about the use of clay tablets. The Mesopotamian cultures recorded on clay, using symbols called cuneiform. Papyrus was developed by the Egyptians and it brought about a modified and more complicated system of hieroglyphics. In China, a brush and ink were used to create meaningful symbols. Thus far, the symbols or pictures of communication represented ideas rather then sounds.

Trade and commerce developed among the ancient countries of the Middle East, and a common method of communication was required. There developed the phonetic alphabet. The seafaring Phoenicians spread their phonetic characters wherever they traded. Their alphabet system was adopted by the Greeks and later became the Latin alphabet, the standard of the Roman world.

Scribes, clerks, monks and scholars all had an effect upon the form and number of the characters in the nearly two hundred alphabets known to have existed. But the advent of movable type and printing changed the systems of communications entirely. Handwriting has become a personal method of communication only.

SUGGESTED PREPARATION OF THE CLASS:

- It should be pointed out to students that the symbols of communications we call the alphabet developed over a long period of time in accordance with certain needs. Today these symbols, when made into type forms, can be reproduced rapidly and economically.
- Display samples of printed matter and discuss.
- Display pictorial reproductions of methods of graphic communications through the ages:

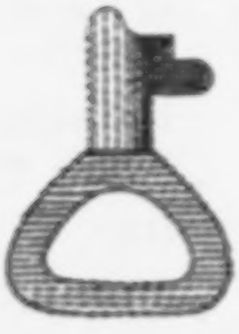
Cuneiform
Hieroglyphics
Indian symbols
Modern type faces
Early type faces

. Correlate unit with the study of world history in social studies.

KEY WORDS:

Alphabet
Cuneiform
Papyrus
Phoenician
Stylus

PUPILS SHOULD LOOK AND LISTEN FOR:



- . Primitive methods of writing using symbols.
- . Pictorial symbols on stone or skin.
- . Chinese symbols using brush strokes.
- . Cuneiform symbols in Mesopotamia.
- . Egyptian writing materials and symbols.
- . Development of the Phoenician phonetic alphabet.
- . Adoption of the alphabet by the Greeks.
- . Roman methods of writing.
- . Development of small (lower case) letters as we know them now.
- . Development of letter styles and printing.
- . The utilization of handwriting as a personal method of communication.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with class:

- . How symbols developed to suit the needs of the people.
- . The meaning of Biblios.
- . The reason for the development of a phonetic alphabet.
- . The effect of printing and movable type upon writing.
- . Why did letter styles change?
- . What effect did the adoption of the Phoenician alphabet by the Greeks and then the Romans have upon the alphabet?
- . Why did writing materials evolve from the cumbersome stones and tablets to paper and wax tablets?

SUGGESTED RELATED ACTIVITIES:

- . Visit a museum or library displaying old manuscripts or samples of early printing.
- . Encourage student research into the types and development of graphic communication. Present results as displays, oral reports, and written reports. Demonstrate and encourage students to experiment with and work with lettering, design and layout and type faces.

RELATED MATERIALS:

Film:

Printing Through the Ages. (Bailey Films) (CUE)

CULTURAL ITEM: "THE AMERICAN LOOK" (Film)
25 min., Color, The Jam Handy Corp.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the purpose of the designer and stylist in industry, and to show why and how products are designed and created.

To develop appreciation for products of functional and beautiful design, and understanding of their contribution to "the good life."

SYNOPSIS:

Today's technology opens new vistas for the future. Never before in man's history have such materials, skills, knowledge and physical facilities been available. The present, and the future, are challenges to the ingenuity of American industry.

This film is a tribute to the designer who creates and develops the ideas that become the products of industry. It emphasizes the arts and crafts of the American stylist, who adds ease, grace and gaiety to our standard of living. His concern is for the basic American love of beauty; a love nurtured by the basic freedom of the American people, that of individual choice. We see how he uses lines, planes, forms, substance and color to create shapes of utility, function, convenience and beauty.

The film itself is a work of art. Its excellent photography creates interest, and involves the viewer in such a way that continual attention is maintained. The film itself uses lines, forms, textures and colors to describe how these same design elements give beauty, charm and elegance to the conveniences, comforts and necessities of our daily lives.

SUGGESTED PREPARATION OF THE CLASS:

The film, used as an introduction to the industrial arts course, would be an inspiration to new students. It would serve as an excellent introduction to a unit on industrial or product design.

To interest students in styling, and to alert them to the film's concepts, point that:

. The technology of American industry is changing our environment.
. The industrial designer is concerned with form and beauty as well as function.
. Good design in our environment affords satisfaction and contributes to well being.

Prepare bulletin board or table displays of designs, past and present, that show how technology has brought about change and improvement. (See CUE Kit materials). Discuss this display, bringing out the above ideas.

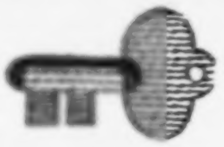
In the discussion, bring out the meanings of key words:

esthetic	form	stylist
designer	function	utility

PUPILS SHOULD LOOK AND LISTEN FOR:

- The creative artistry of the photography.
- How the music emphasizes the beauty and artistry of the scene or products shown, yet gives continuity to the film by creating an esthetic mood.
- The forms and colors, and expressive changes in textures and forms.
- The functional beauty, as well as form, in the designer's work.
- The purpose of the designer and stylist; types of materials shown.
- The design process used in creating the automobile body design.
- Areas of American life affected by the designer and stylist.
- The principles and elements of design used.

PRESENT MEDIA.



SUGGESTED FOLLOW-UP ACTIVITIES:

To check on learnings and to extend the film's concepts, discuss these or similar questions:

- What is the purpose of the designer and stylist in modern industry? How does he affect our lives?
- What is meant by the phrase: functional forms of beauty?
- What is meant by the design theme?
- How has the designer and stylist affected architecture?
- How do color and streamlining add to efficiency of home and office interiors?
- Why improve and change the engineering design and shape of machines for outdoor use?
- How have new materials and designs been incorporated in sports equipment, playgrounds, and even zoos?
- What is the purpose of packaging?
- How have modern fashions and the textile industry been affected by the principles of design?
- Why was the design of the automobile undertaken by many individuals?
- Why was the automobile design created on paper and in clay before making a prototype of materials used in the finished project?

SUGGESTED RELATED ACTIVITIES:

To deepen and broaden understandings:

- Obtain samples of well-designed products for display.
- Have students gather pictures or photo-copies of well-designed products.
- Prepare a display of basic industrial materials that have made possible our present living standard. Prepare a follow-up display of new materials that will allow designers and stylists to create even better and more beautiful products. Such displays may be applicable to a specific area in industrial arts, or may include all areas.

- Visit factories to observe product design and manufacture.
- Visit retail outlets and observe displays. Have students evaluate products they observed.
- Encourage student research and reports on styling.
- Invite a designer or stylist to lecture on design and materials; solve a sample design problem, or evaluate student work.

SUGGESTED RELATED CREATIVE ACTIVITIES:

Have students design an original product, or redesign an existing product, using the basic design process:

Statement of problem.
Analysis and research.
Possible solution.
Experimentation.
Final solution.

RELATED MATERIALS:

Films:

Seven Guideposts to Good Design. (Heath de Rochemont Corp.) (CUE)
Design. (Bailey Films, Inc.)
Up from Clay. (Fisher Body Craftsman's Guild, General Motors Corp.)

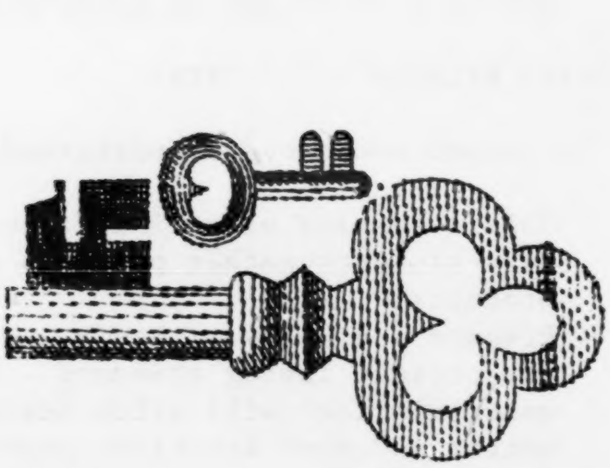
Book:

Design Textbook. (John R. Lindbeck)

Booklets:

The Ford Book of Styling. (Ford Motor Co.) (CUE Industrial Arts Kit)
Discussion in Design. (Shell Oil Corp.) (CUE Industrial Arts Kit)

CUE Insights: Good Design.



CULTURAL ITEM: "DESIGN FOR BEAUTY" (Film)
28½ min., Color, International Silver Company.

CURRICULUM AREA: Industrial Arts (NOTE: Industrial Arts teachers may wish to use only the first 16 minutes of the film.)

PURPOSES:

To alert students to the beauty and character inherent in silver.

To help them learn how fine silver pieces are created.

To inform them of industry's role in bringing fine quality and design to everyone.

SYNOPSIS:

In his search to bring beauty into his life, man found the metal silver. It was used for adornment in ancient times, and is still a treasured material. In creating designs for silver, the artist's hand and mind are essential in attaining quality and perfection. Today, this perfection can be repeated hundreds of times by the power of industry. This film reveals how man's creative talents are captured in silver.

SUGGESTED PREPARATION OF THE CLASS:

To show students the importance of beauty in their environment, made newly available by mass production, explain that all men seek order, pattern and sense in their environment. This need leads to a desire for beauty, which is order of a special sort. Formerly, only an elite few could own and enjoy articles of beauty and fine craftsmanship. Today, mass production techniques enable fine designs of master craftsmen to be reproduced in quantity so all may enjoy them.

Discuss various metals, their uses and value. Display bulletin board pictures or photocopies of the products of silversmiths and of the silver industries. Prepare displays of fine silver pieces, both flat and holloware.

KEY WORDS: Flatware; holloware; forging; sterling.

PUPILS SHOULD LOOK AND LISTEN FOR:

- How silver has been valued and used through the ages.
- The origin of the name "sterling."
- The differences between flatware and holloware.
- How the artist creates a design for silver.
- How light and shade bring out the character of the material.
- How the artist's design is reproduced by industry.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss:

- Industry's role in bringing good design and quality to the masses. Everyone may have good design in products he uses, while formerly only the wealthy could enjoy many quality products.
- To enjoy good design, one must know what good design is.
- All good design is functional; serves a purpose; fits the user; is esthetically pleasing.
- Beauty and functional design may be achieved in other metals, such as stainless steel.
- Importance of competitions in promoting good design.
- The artist's role in industry as a source of valuable ideas for production.

SUGGESTED RELATED ACTIVITIES:

1. Encourage students to design flatware, holloware and jewelry. Use non-precious metals to make actual objects (copper, pewter).
2. Visit a museum to observe art metalwork.
3. Visit stores to view commercial art metalwork.
4. Conduct an art metalwork design competition among students.
5. Demonstrate and encourage student art metalwork in forging, raising and forming.

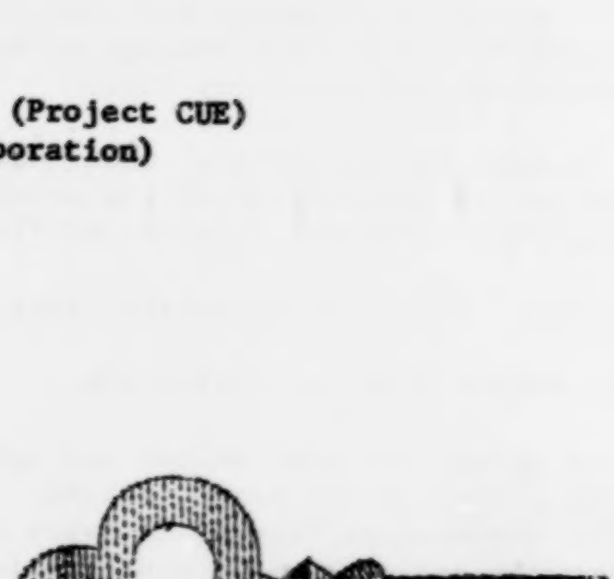
RELATED MATERIALS:

Films:

Seven Guideposts to Good Design. (Project CUE)
The American Look. (Jam-Handy Corporation)

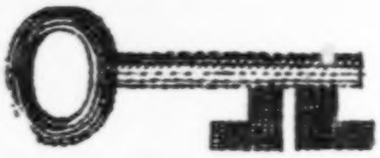
Periodical:

Craft Horizons.



CULTURAL ITEM: "DRAWINGS AND MODELS OF INVENTIONS OF LEONARDO DA VINCI"
(Slides)
28 frames, Color, International Business Machines Corp.

CURRICULUM AREA: Industrial Arts



PURPOSES:

To introduce invention as basic for progress.

To acquaint students with the use of drawings to express ideas.

To show students how product development results from imagination experimentation and research.

To impress upon students the need for a well-rounded education and an inquiring and open mind.

SYNOPSIS:

Leonardo da Vinci (1452-1519) was one of the greatest creative geniuses of all time. His desire was to explore and to understand the universe. As a scientist, he assimilated and then applied facts; as a master artist, he presented them in such a way that they were clearly understandable, and applicable to his culture. To him, invention was an art. He was a well-rounded man whose education never ceased. As an artist, he possessed a critical, observing eye and a highly creative imagination. He possessed also the discipline of a scientist, the precision of a mathmatician and engineer, and skill and experience in anatomy, architecture, astronomy, geology, music, and sculpture. His unique and varied talents made him one of the greatest inventors of all time.

He was often employed by the dukes of north Italy as a painter, sculptor and architect. When the dukes were at war, which was often, he disgned fortifications and war equipment for them: the breech-loading cannon and an armored tank are examples.

Sometimes he invented machines to illustrate or to prove a scientific principle. He realized that there is a relationship between artistic and structural form, that art and technical knowledge are interrelated.

Before the discovery of America, da Vinci a contemporary of Christopher Columbus, was sketching and building models of a steam gun, paddlewheel ship, air-conditioning unit, hydraulic pump, parachute, flying machine and many other devices considered by most to be modern inventions.

His foresight and inventive ability are evident in these slides. Each invention is applicable today, although greatly refined and adapted to our advanced technology. His sketches and notes were complete enough to allow the construction of the models shown in the slides.

SUGGESTED PREPARATION OF THE CLASS:

Today's research and experimentation in industry are based upon the very principles to which da Vinci adhered. He studied all aspects of any problem, and tried different solutions; he designed, tested and re-designed models. To make students aware of these pre-requisites for progress, the following approaches are suggested:

- The slides may be used for pupil motivation in a unit planning or industrial design of products.
- Obtain pictures (or photo-copies) of da Vinci's work and current applications of his ideas and principles and prepare a bulletin board display.
- Have students do library research on da Vinci in preparation for presentation of slides.
- To motivate and interest, prepare and display three-dimensional models of some of da Vinci's inventions.

PUPILS SHOULD LOOK AND LISTEN FOR:

- Evidence that da Vinci was a dreamer or a theorist.
- The sketching technique of da Vinci. Notice the detail sketches and the notes that supplement the presentation.
- The mechanical simplicity and ingenuity of his designs.
- The inventions which had practical applications, then and now.
- Evidence that da Vinci was hundred of years ahead of his time.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To alert the qualities in da Vinci that led to his study of nature, invention and art, ask these or similar questions:

- Why has he been termed the "father of styling or industrial design?"
- Were da Vinci's inventions prompted by need? Were they functional?
- Did da Vinci create with an open, inquiring mind? How could we go about creating in a similar manner?
- What sort of education and training did da Vinci need, in order to experiment, invent and create as he did?
- How did his knowledge of art help him?
- Why did he use mirror writing in his sketches? Was there a patent system in existence?
- Why were da Vinci's inventions rather limited in their use of materials?
- Why did he depend mainly on human, animal and water power?

Have the pupils discuss the following: "How would the division of labor, working conditions, automation, experimental laboratories, economic system and the social structure in contemporary America help or hinder da Vinci in the pursuit of his interests and abilities if he were alive today?"

SUGGESTED RELATED ACTIVITIES:

- Have students maintain an idea notebook for sketches and notes on their inspirations.
- Visit local industries of observe design, research and model-making facilities.
- Obtain resource persons to lecture on design, reserach and development.
- Have students plan and build models of da Vinci's inventions.
- Have students find pictures or materials illustrating da Vinci's achievements as an architect, inventor, designer, experimenter and engineer.
- Show students the film, "Leonard da Vinci," to help them appreciate the paintings and see the inter-relation of scientific and artistic thought.

SUGGESTED RELATED CREATIVE ACTIVITIES:

Have students re-design some of da Vinci's inventions in light of our current technology. This can be in the form of their own sketches.

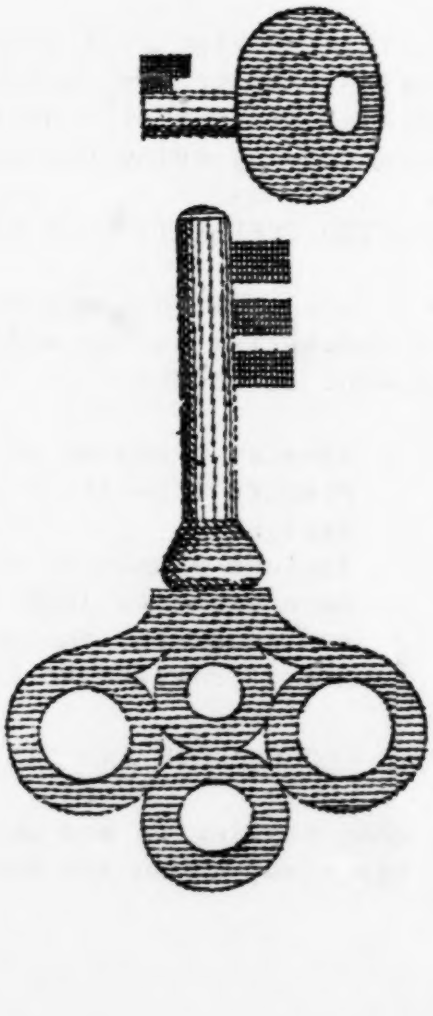
RELATED MATERIALS:

Films:

Seven Guideposts to Good Design. (CUE)
The American Look. (CUE)

Booklets:

The Ford Book of Styling. (CUE)
Leonardo da Vinci. (CUE)



CULTURAL ITEM: "THE FORD BOOK OF STYLING" (Booklet)
Ford Motor Company
(Note: A filmstrip may be available later)
CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with industrial design and styling.

To assist students in understanding the need for designing beauty into useful things.

SYNOPSIS:

The industrial designer and stylist is relatively new to the industrial scene. He was created by the realization that the products of industry must have the best functional and esthetic values possible to meet the demands of our culture.

The ancient artisan created his product in accordance with his skills, materials and techniques available, and designs tested and proved by time. The advent of the machine age stressed quantity, and esthetic values consisted of added decoration which was not only unnecessary but often detracted from the object's usefulness. This was a hangover from the ornamental traditions so valued by the Renaissance period.

Until recently, machine-made products have been judged on the basis of the superficial ornamentation of the Renaissance. The basic problem of the industrial designer and stylist, then, is to create new esthetic standards for the new methods of production so symbolic of our age and not vice versa.

This booklet will give students insight into the heritage of industrial design, its present purpose and application, and unlimited future. It can be used as part of a design library, as a display, or as part of class instruction by using the opaque projector.

SUGGESTED PREPARATION OF THE CLASS:

A study of contemporary industry in industrial arts requires the inclusion of industrial design and styling. The following are suggested to create student interest:

- Display examples of good product design.
- Prepare a bulletin board pictorial display of good versus poor product design.
- Include a unit on product design in the curriculum.
- Have students look for poorly designed objects in their homes, list them and recommend improvements. Have them bring one to class and conduct a class critique to create interest in design.

PUPILS SHOULD LOOK AND LISTEN FOR:

- What styling is and when it began.
- Egyptian, Roman and Medieval styling.

- Renaissance styling and 19th Century styling.
- The effect of the machine age.
- The stylist, his purpose, training and skills.
- Leonardo daVinci as a stylist.
- Design and the fine arts.
- The design process and product planning.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- What is industrial design and styling?
- The industrial designer and stylist.
- Comparison of ancient and pre-twentieth century product design and styling with contemporary purpose and techniques.
- How does the designer-stylist join nature and art with technology?
- Leonardo daVinci as the first real designer-stylist.
- The fine arts and industrial design.
- The industrial design and product planning process.
- The further implications to industry of design and styling.

SUGGESTED RELATED ACTIVITIES:

1. Display prints of paintings by Mondrian, Cezanne, Matisse, Picasso. Explain the influence of modern art on product design.

2. Describe the Bauhaus School of Design in Germany. Explain that it was important because:

   - It courageously accepted the machine as an instrument worthy of the artist.
   - It faced the problem of good design for mass production.
   - It bridged the gap between the artist and the industrial system and broke down the barriers between fine and applied arts.
   - It developed new ideas in design which have influenced Europe and the United States.
   - The Bauhaus rationale was that simple geometric shapes were best suited to machine production. Although many people do not agree with the view, the school had had a great deal of influence; the standards applied to most useful objects today are still dominated by the Bauhaus esthetic.

3. Explain to students that, while it is important to know the richness of designs of the past and to be inspired by them at times, we must not slavishly copy. Instead, it is important to consider function and material, as well as sociological and economical factors, to form new designs fitted to the needs of contemporary life.

4. Discuss planned obsolescense of industrial designs (as in automobiles), and its economic and moral implications.

5. Use Saturday Review, May 23, 1964, reprints of the 20 best industrial designs.

6. Visit a local industrial design firm or the design department of a local industry.

7. Invite an industrial designer as guest speaker.

8. Encourage student library research into the origin and the development of industrial design and styling. Present as a display, oral report and written report.

9. Have students design or redesign products and then construct the prototype. Conduct a design competition and display.

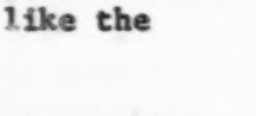
10. Enroll students free in the Fisher Body Craftsman Guild by writing to the Fisher Body Craftsman Guild, General Motors Corporation, Warren, Michigan.

11. Require original student design or redesign in all project work.

RELATED CREATIVE ACTIVITIES:

To give students further understanding of styling and design explain that "Form Follows Function" is the criterion for good industrial design. We must also realize that new scientific, technical and artistic developments make some designs, formerly thought good, look clumsy and poor. The designer must know processes and materials and their possibilities. To do this, it is necessary to explore materials through exercises like the following:

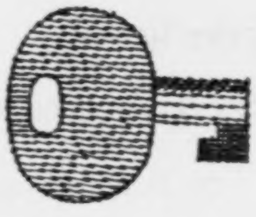
- Make a hand sculpture - of wood, clay, metal, stone or plastic - which feels good in the hand and fits it. This exercise helps students recognize the necessity for controlled relationships between shape and size - the basic elements of carving or modeling - and leads to the conquest of different spatial planes and the perfection of flowing faultless contours which can be viewed from any side, and demonstrates the importance of tool handles. The sculptures may have holes for fingers, have springs or twisting parts.
- Utilize all sorts of hand tools to make a texture chart in wood, making as many interesting textures as possible.
- Invent and execute machined objects, utilizing the possible actions of the power tools.
- Manipulate a flat sheet of paper or screen into a three-dimensional object by bending, twisting, scoring, embossing. Draw or photograph the object.
- Warm a sheet of clear thermoplastic to demonstrate the potential richness of a plain sheet changed to a three-dimensional structure. Study the light effects.
- Have students look in magazines for photos of, or bring in, products they consider well designed, and tell why.



RELATED MATERIALS:

Films: "The American Look" - The Jam-Handy Corp. (Project CUE)
"Seven Guideposts to Good Design" - Heath deRochemont Corp. (Project CUE)
"The Secret Door" - Ford Motor Company (Project CUE)

CULTURAL ITEM: "THE LIVING ARTS OF JAPAN" (Film)
Sakura and Company, Ministry of Japan
Color



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with some of the arts and crafts of Japan.

To help them understand how the Japanese love of beauty as expressed in their arts, is an integral part of their life.

SYNOPSIS:

The essence of the traditional arts and crafts of Japan can best be observed in the mode of life of the Japanese people who create and cultivate them. They have a deep love of nature and its beauty and the arts they create grow out of it. The arts become an integral part of their daily life. The tokenoma epitomizes this love beauty for its in this alcove that works of art are displayed. The tea ceremony allows for admiration of the lacquer and ceramic ware as well as the graceful stylized movements which accompany it. The craftsmanship shown in the film gives insight into Japanese, skill, artistic talent and the painstaking care devoted to bringing beauty into daily life.

SUGGESTED PREPARATION OF THE CLASS:

To motivate and build foundations for the film:

1. Secure samples or photographs of Japanese arts and crafts for display. Students may be requested to bring these in if possible.

2. Discuss this display with the students bringing out the facts that art is a part of the daily life of Japanese people through their arts and crafts which are an outgrowth of their love of nature's beauty, and that much of Japanese life is characterized by ceremonies in which the arts play an important part.

KEY WORDS:

tea ceremony
wood block
lacquer
takenoma
porcelain
makie (depositing gold and silver on lacquer)
glaze
Mother of Pearl

PUPILS SHOULD LOOK AND LISTEN FOR:

- The deft work of the potter in moulding and glaze painting.
- The way in which kimonos are designed and painted.
- The painstaking procedure in producing Makie.
- The way in which the natural beauty of bamboo is brought out.
- The way in which most Japanese arts are based on drawing and have similar characteristics.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To further appreciations of Japanese, discuss with the class:

- The processes of the various arts presented.
- The way in which modern works are often inspired by ancient arts.
- The way in which Japanese utilize materials plentiful in nature to make articles of beauty for everyday use.
- The way in which the arts play a part in everyday life of Japan.

To build the concept that art reveals life, ask: What did this film and discussion teach you about Japanese life and character? Bring out the following facts:

- Art and beauty are a part of everyday life and activity.
- Art and beauty make life more gracious and pleasant.

To impress on students the patience and skill necessary to good craftsmanship, stress the skill, talent, aptience and reverence for beauty shown in this film.

- The Japanese artist expresses his own personality through his skill and artistry.

SUGGESTED RELATED ACTIVITIES:

Students may:

1. Visit a potter to observe techniques.

2. Make and glaze pottery or a "lino" or block print.

3. Do research on any of the arts shown.

REFERENCES - RELATED CUE MEDIA:

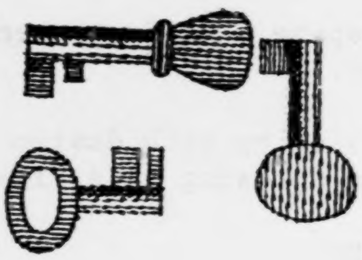
(See Japanese notebook in CUE Social Studies Kit)

Ikebana. (Ministry of Japan)
Japanese Family. (Julian Bryan)
Japan. (Julian Bryan)
Treasures of Japan. (Ministry of Japan)
Folk Music of Our Pacific Neighbors. (CUE Kit) (Stanley Bomar)
Guided Tours of World-Japan. (Columbia Records)
Art of Origami. (CUE Kit)
An Introduction to Haiku. (English CUE Kit)
Japan. (Bantam) (English CUE Kit)
Metropolitan Seminars.

OTHER RELATED MATERIAL:

The Big Wave, - Pearl Buck. (Hiroshige and Hokusai)
Japanese Tales and Legends, - Helen and William McAlpine. (Joan Kiddell-Monroe)
Let's Visit Japan, - John C. Caldwell. (John Day)
Secret of the Samurai Sword, - Phyllis A. Whitney. (Philadelphia, Westminster)

CULTURAL ITEM: "THE SECRET DOOR" (Film)
Ford Motor Co.
22 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the process of styling in industry.

To impress upon students the need for imagination and research in developing ideas and new products.

SYNOPSIS:

Styling by the industrial designer applies esthetic values to the product in accordance with changing customs and tastes and within the specifications of industry. Even though he is predominantly an artist, with the privilege of self-expression, the stylist is primarily concerned with the needs of others for his art is applied. It is functional.

The stylist is concerned with a key industrial process, for today's customer demands 20th century styling. He sketches many ideas from which only a few are selected for actual use. Product planning sets the general guidelines and the stylist presents his ideas graphically as sketches. The final selections become blueprints. These are then proven and made into full-scale renderings and full-scale clay models. If approved, the product goes into production.

The work of the stylist always looks to the future. His creative ideas, when coupled with research, open almost unlimited vistas. The film presents quite well, in color and with intriguing insights, the world of the stylist and his function to add beauty and value to the products of machines.

SUGGESTED PREPARATION OF THE CLASS:

Every person buys a product because of a need. If there are many such products from which to choose, why does he select the one he buys? Modern industry is becoming quite concerned with usefulness and beauty in the things it produces. Every consumer, including the students in the class, should be aware of styling and the effect it will have upon their lives both now and in the future.

Enroll all students in the Fisher Body Craftsman's Guild, sponsored by the Fisher Body Division, General Motors, Warren, Michigan. Each student will receive the Design and Building Manual, the Guild Sketch Sheets listing all specifications for designing model cars, and a subscription to the Guild Newsletter. All are free of charge.

Prepare samples of well designed products for display. (See CUE Kit).

Maintain continual bulletin board displays of pictures of photocopies of well designed products to encourage good design on the part of students.

Prepare a handout sheet on the basic design process and the elements of design.

Follow up with design problems. Clarify and give meaning to the information by using this film.

KEY WORDS:

Aerodynamics
Armature
Delta Shape
Exotic Fuels
Gyroscopic Stabilizer
Radar
Rendering
Styling

PUPILS SHOULD LOOK AND LISTEN FOR:

- The improvement of styling in the automobile throughout the year.
- The procedure followed by the styling department in developing an automobile design.
- The making of clay models and mock-ups.
- The artistic ability of the stylists.
- The testing of operational experimental models.
- The advanced research on concepts for future models.
- How industry determines what designs the consumers will buy.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- What training and skills must the stylist develop as an artist, craftsman and designer?
- From where does the stylist get his ideas?
- What is the purpose of the chief stylists?
- Why make a model of wood and clay instead of metal?
- What were the steps in styling used by the design department in this film?
- Why test the experimental model for: aerodynamic design; cold temperature; sound; brakes and other special parts; road tests at proving ground?
- What ideas may influence auto, truck, tractor, etc., design for the future?
- Why are such drastic security measures used at the Styling Center?

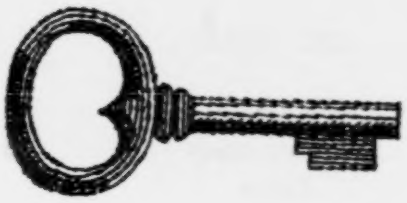
SUGGESTED RELATED ACTIVITIES:

Encourage student library research about industrial design and styling. He may present his research results as: display, oral report and written report.

Schedule a visit by traveling representative of the Fisher Body Craftsman Guild by writing directly to Warren, Michigan, or by contacting any local General Motors dealer.

Encourage the submission of entries in the Fisher Body Craftsman Guild automobile design competition by interested students.

CULTURAL ITEM: "SEVEN GUIDEPOSTS TO GOOD DESIGN" (Film)
Heath deRochemont Corp
15 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the basic principles of good industrial design, and provide a basis for consumer judgment.

To acquaint students with the purpose of the industrial designer in industry.

SYNOPSIS:

Modern technology has made the invention, production, distribution and acquisition of material things a characteristic of our times. Its importance, spurred by a high degree of competition, has brought about a need and a concern for improved industrial design.

It was William Morris who, near the end of the 19th Century, declared that the most important role of the arts was the creation of the everyday things used by most people. This called for the combination of artist and technician, a reversion to the pre-Renaissance period when the term artist and artisan were identical. This also meant overcoming an 18th Century trend when there arose an even greater distinction between "fine arts" and "useful arts."

The 19th and early 20th Century concern with mass-production for the sake of quantity has been changed somewhat by consumers' increased awareness of and demand for good design and quality. So, just as the hand craftsman of old designed, made and sold his work, contemporary industry is turning to the industrial designer to produce functional forms consistent with the materials and technology of our culture and with time-tested and valid principles.

This film presents seven principles the industrial designer uses in designing a typical product. The colorful scenes, and the samples, good and bad, are consistant with the principles presented by the film. It gives an interesting and valid insight into creative design in modern industry.

SUGGESTED PREPARATION OF THE CLASS:

To introduce students to styling, use the booklet entitled "The Ford Book of Styling" (Project CUE Packet Industrial Arts Kit) to help them understand industrial design. The following additional suggestions may be used:

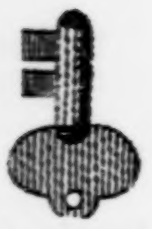
- Display pictures or photo-copies of well-designed contemporary products as compared with products manufactured thirty years prior and back through the history of man. Discuss their form and function.
- Have students list criteria by which they would design, construct or buy a product.
- Display well-designed products and have students conduct a critique.

KEY WORDS:

Appearance
Economy
Form
Function
Humanization
Industrial designer
Material
Shaping
Structure

PUPILS SHOULD LOOK AND LISTEN FOR:

- . The role of function.
- . Humanization in design.
- . The honest and appropriate use of material.
- . Shaping processes as part of the design.
- . Good structural relationship of parts.
- . Economy of material and effort.
- . The necessity for pleasing color, texture, and shape.



PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure that students have grasped the concepts presented in the film, discuss with the class as you exhibit products in room display:

- . The meaning of the phrase "form follows function."
- . Why should a product be designed in accordance with man's needs?
- . Does every material have its own inherent beauty and use? Explain.
- . How can a product reflect the tools and materials used to make it?
- . How can all parts of the product work together as a whole?
- . In light of our present technology and economy, why should a product reflect savings in material and effort?
- . What effects do color, texture and shape have upon the final appearance of the product?
- . Can man's efforts be linked with those of nature? Explain.
- . What are the possibilities of the future?

SUGGESTED RELATED ACTIVITIES:

Visit a local design firm or a design department of a local industry to observe the work of the industrial designers.

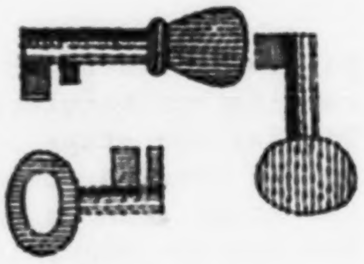
Invite as a guest speaker a local industrial designer.

Ask students to choose any home appliance or product and re-design it. Ask: Could it be made smaller? Larger? Could it be combined with something else (as a lamp and table joined?) Could it be made in two parts? Of another material? Lighter? Heavier?

Make models of these re-designed products, analyze, and then construct the prototypes. Display the results and conduct a design competition. This can be carried further by conducting a survey among the school student body to determine which products they would purchase and why.

Encourage students to enroll and participate in the Fisher Body Craftsman Guild Car Design Competition. Write to Fisher Body Craftsman Guild, General Motors Corporation, Warren, Michigan.

CULTURAL ITEM: "THE SADDLEMAKER" (Film)
National Film Board of Canada
17 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the functional and esthetic qualities of leather.

To acquaint students with the tools and materials used in hand-crafting leather.

SYNOPSIS:

Leather is an organic material that, properly prepared, is highly useful in the hand and machine production of goods. Leathers vary according to the nature of the animal from which the hide is taken and the tanning process used. They come in heavy grades, from large animals (cow, bull), and in light grades from small animals (sheep, pig, lizard). The quality of hides varies according to the location and conditions involved at the source of the animals.

The leather hides must be prepared for manufacture by a process called "tanning." Sometimes skins are prepared with mineral salts in a process called "tawing." When light leathers are prepared for extra suppleness, a process using oils and fats is called the "chamois" method.

The further preparation of leather requires "currying," which renders it more pliable and increases its strength. It is then "pared" to thickness, "waxed," and "dressed" in many ways. The final result is a material appealing to the visual and touch senses, giving it a great deal of esthetic appeal.

Although leather is used in much the same way as any textile fabric, and is processed by machinery requiring skilled craftsmen, there is still a demand for hand-made objects in the time-honored tradition of the artisan. This film presents an episode in the life of a teenager in her quest for a saddle made in the traditional way of the saddle-maker. It shows the cutting, tooling, forming, and the sewing of the leather until the finished saddle results. It emphasizes the care and pride in the craftsman's design and work.

SUGGESTED PREPARATION OF THE CLASS:

There is always associated with hand craft production the concept of a single unit, made and controlled by the individual artist or artisan, resulting in a masterpiece. The following are suggested to acquaint students with leather and leather-craft:

- Prepare a display of leather goods hand-crafted or manufactured by industrial production methods.

- Display pictures or photo-copies of hand and industrial leather processing and manufacturing operations and techniques.
- Display the steps in manufacturing leather goods by hand and industry. Obtain samples of parts and tools in the various stages of manufacture. Use items such as belts, purses, shoes and wallets.
- Discuss the signifiance and development of leather and leather-craft throughout history.

KEY WORDS: Stitching Tooling Wooden tree

PUPILS SHOULD LOOK AND LISTEN FOR:

- Rodeo scenes and the impressive scenery.
- Equipment used by the saddlemakers.
- The layout of patterns and the cutting of the hides.
- The transfer of the design.
- Tooling of the leather.
- Fitting and trimming the parts.
- Assembly and sewing of the parts.
- The functional and the esthetic quality of the finished saddles.

PRESENT MEDIA:

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- The demand for hand-made leather goods.
- Esthetic qualities of leather goods.
- Creation and design of surface decoration on leather.
- Tooling of the leather.
- Cutting, assembly, and sewing of leather.
- Functional and esthetic qualities of leather goods.
- Skill of the craftsman.

SUGGESTED RELATED ACTIVITIES:

1. Encourage student library research to determine the origin and development of leather preparation and use. Present as a display, oral report or written report.

2. Visit a leather goods shop or a local industry using leather.

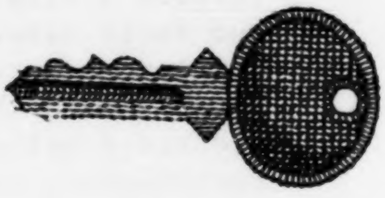
3. Discuss the use of man-made materials in articles formerly made of leather such as Vinyl or other types of plastic and their possibilities for the future.

4. Have students design or redesign leather goods and make the prototype. Conduct a design competition, and display.

RELATED CREATIVE ACTIVITIES:

1. Demonstrate and encourage student application and experimentation with:
   - Design of leather goods.
   - Selection, layout and cutting of leather.
   - Assembly of parts (gluing and sewing).
   - Tooling of leather.
   - Finishing of leather.
2. Encourage students to create, design and manufacture original leather projects.

CULTURAL ITEM: "ART OF METAL SCULPTURE" (Film)
22 min., Color, McGraw-Hill Films.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To investigate the use of metal and metal working techniques as an art medium.

To acquaint students with some basic metalworking tools, materials and processes.

To help students understand the purpose of contemporary architecture and sculpture - to express what is unique of our age.

SYNOPSIS:

Symbolic of any given age is the use to which man puts the materials available to him in accordance with his technology. Our revolutionary age of advanced technology has presented man with techniques that were not even thought probable only decades ago.

Such is the process of welding, an industrial technique as much 20th Century as is the concrete, glass and steel in architecture. The welder can build ships, automobiles, machinery and many other products of industry. He can also create the purely esthetic by using his imagination, metal and the welder's torch. Just as the ancient Egyptians and Greeks needed stone for their sculpture, and medieval man used stone and wood, today's contemporary sculpture can best express our age by using its own unique materials and processes.

Welded sculpture is gaining in favor with contemporary architects in an attempt to humanize and enrich their creations. It is more consistent with contemporary architecture because it speaks of and stands as a monument to our age.

This film presents the creation of a welded sculpture by a well known artist-welder, Tom McClure. The inception of the basic design, its planning, fabrication of the parts, the assembly, and the installation are presented in an engrossing episode. Many planning, metalworking, welding and safety procedures are emphasized. A unique use of time-lapse photography virtually causes the sculpture to "grow" before the viewers eyes.

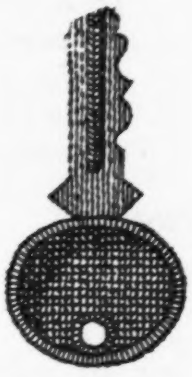
SUGGESTED PREPARATION OF THE CLASS:

The possibilities of welding are many. It is a technical skill necessary to an understanding of contemporary metalworking industry. Inherent in modern industry is a combination of the technical and the esthetic in industrial design. It is to this end that the following are suggested:

- Prepare a display of various types of metals available to industry and their uses.
- Display pictures of oxyacetylene and arc welding as used in industry. Discuss with the class.
- Prepare a bulletin board display of pictures and/or photo-copies of contemporary architecture utilizing metal sculpture. Discuss with the class.

KEY WORDS:

Esthetic
Acetylene
Bronze
Fusing
Oxygen
Puddled
Texture
Tacking
Welding



PUPILS SHOULD LOOK AND LISTEN FOR:

- The visit to the proposed site of the sculpture.
- Creation of the basic idea.
- Preparation of the working drawings.
- The fabrication, assembly and welding of the parts.
- The attention to detail.
- The safe working habits.
- The finished shopping center.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure understanding of the process, discuss with the class:

- The artist's attention to detail.
- The drawings necessary.
- The purpose of the scale model.
- The welding equipment and techniques used.
- Personal safety when welding.
- The forming and assembly of parts.
- The need for continual evaluation and redesign if necessary.
- The esthetic and functional qualities of the finished sculpture.

SUGGESTED RELATED ACTIVITIES:

- Have students conduct library research to determine the origin and development of welding. Present as a display, oral report, or written report.
- Encourage students to look for and visit good examples of local contemporary architecture using sculpture as an integral part of the design.
- Encourage students to include metal sculpture in their design of structures for a unit on architecture and construction.

SUGGESTED RELATED CREATIVE ACTIVITIES:

1. Encourage students to design and construct models of metal sculpture appropriate for the school grounds or building. Correlate with the art class.

2. Demonstrate and encourage student work and experimentation in:

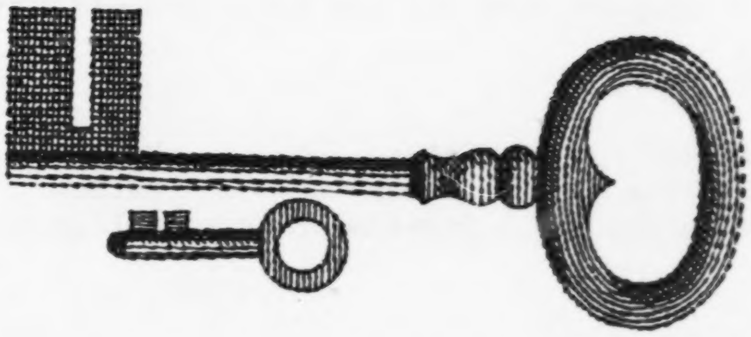
   - Layout, cutting and filing of metal.
   - Bending and forming of metal.
   - Oxyacetylene cutting, brazing, and welding.
   - Arc welding.
   - Grinding with grinding wheel and abrasive disc.
   - Wire wheel buffing.

3. Encourage students to design and construct free-form sculpture using metal scraps while practice welding.

RELATED MATERIALS:

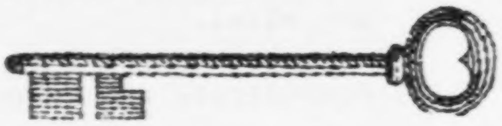
Films:

Irons in the Fire. (Contemporary Films) (CUE)
Casting in Bronze. (University of Iowa Film Library) (CUE)
Unisphere-Biggest World on Earth. (United States Steel) (CUE)
Metalwork Art Through the Ages. (Encyclopedia Britannica Films) (CUE)



CULTURAL ITEM: "CASTING IN BRONZE" (Film)
18 min., Color, University of Iowa Film Library.

CURRICULUM AREA: Industrial Arts



PURPOSES:

To acquaint students with the technique of metal casting and provide a basis for appreciation of cast metal form.

To observe the basic mold-making technique involved in the lost-wax method.

SYNOPSIS:

One of the oldest techniques of artistic expression in metal is the cast bronze statue. Here the creative talent of the artist is combined with the technical skill of the foundry. A pliable, non-permanent model is used to produce the mold, and finally the finished metal is cast as an exact duplication of the original.

The technique stressed by the film is the lost wax (ciré perdu) process. The preparation of the mold, the core, the spruing system are presented in a clear an logical manner. The pouring sequence is especially exciting and basically duplicates the method of the foundry.

SUGGESTED PREPARATION OF THE CLASS:

1. Prepare a display on types of casting metals available.

2. Display samples, pictures, or photocopies of cast metal products, including samples of the lost wax process.

3. To help the class grasp the beauty and excitement of metal casting: Explain that casting metal is one of the most exciting and suspense-filled activities in the art, craft, and industry of metalworking. It is important that students understand its application, significance, and role throughout history to better understand its part in contemporary industry.

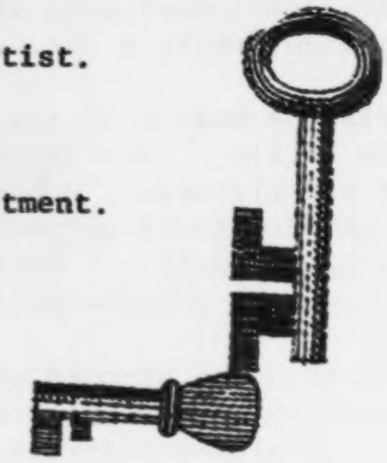
4. Discuss the evolution and significance of metal casting through history as an art form and as an industry.

5. Discuss contemporary industrial investment casting with the class to prepare them for the basic process shown here in the film.

KEY WORDS:

Anneal
Chasing
Flashing
Gates
Ingots
Investment
Mold
Patina
Silica sand
Spruing system
Wax

PUPILS SHOULD LOOK AND LISTEN FOR:



- Preparation of the model (or pattern) by the artist.
- Making the mold.
- Application of the wax.
- Making the core.
- Making the spruing system and the outside investment.
- Burning out the wax.
- Casting the statue.
- Suspense during the casting process.
- Cleaning and finishing the casting.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To insure understanding of the process, discuss with the class:

- Purpose of the wax.
- Why use plaster for the mold materials could be used?
- Purpose of the spruing system.
- How is the core kept in place? Why?
- Why reinforce the mold with wire and rods?
- Melting and casting the bronze.
- Suspense generated during the casting of the statue. Why?

SUGGESTED RELATED ACTIVITIES:

- Visit a local foundry and observe pattern making, mold-making and casting in action.

- Encourage students to search out and list the number and type of cast bronze statues made in the film that are in the local area.

- Encourage students to conduct library and museum research on famous works of art made using the lost wax process. Present as a display, oral report and written report.

- Especially exciting is the section of Benvenuto Cellini's autobiography concerning the casting of his famous "Mercury." Explore also the work of Verrochio and Desiderio da Setegnano.

- Display The Chalice of the Abbot Suger, National Gallery Print (CUE). Explain its use and explain that this is what the "Holy Grail" may have been like.

- Display Benvenuto Cellini's famous "salt" (page 11, "Ford Book of Styling," CUE Industrial Arts Kit). In medieval times, the "salt" was a status symbol. It was placed between the kind and the guest of honor. Persons of lower status were "below the salt," an expression we still use today.

- Jewelry, ceremonial objects, arms, armor and coins are of particular interest as metal form, created for use and beauty, that often reflect aspects of history. Se the CUE film "Art Treasures of the Kremlin", for jewel-encrusted crowns and other works which are masterpieces of the goldsmith's art.

. Visit a museum to see armor, tools, mail, and weapons worn by soldiers in battle. Some armor is embellished with intaglio decorations of great richness. Weapons, especially those used for ceremonial rather than practical purposes, often sport jewel decorations in addition to engraved motifs. Here the balancing of function and beauty becomes the important consideration.

. Explain the process of striking coins. Ancient Greek coins tell us much about the life customs and esthetics of the Greeks. They give us idealized portrayal of many famous people, like Cleopatra and Alexander the Great. Coins also have preserved for us the appearance of many masterpieces of sculpture, such as the Athena Porthenos, which, though famous in their day, have been completely lost. While coins are only occasionally designed by prominent artists, medals almost always are. They are used to commemorate important events or persons of the time. Refer to the John F. Kennedy half dollar. Explain the joys of numismatics but point out the detrimental effect of over collecting of coinage on our monetary system.

SUGGESTED RELATED CREATIVE ACTIVITIES:

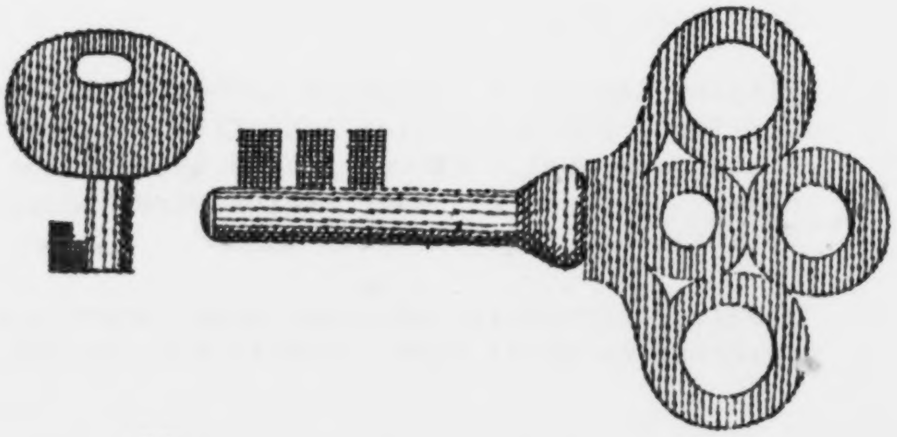
Demonstrate the following and encourage student experimentation and application:

. Pattern making (core).
. Mold making (sand, plaster, metal die).
. Melting metals (types and procedure).
. Casting metals.
. Cleaning and finishing castings.

RELATED MATERIALS:

Films:

Art of Metal Sculpture. (McGraw-Hill) (CUE)
Metalwork Art Through the Ages. (Encyclopedia Britannica Films) (CUE)



CULTURAL ITEM: "COLOR, TEXTURE AND FINISH" (Film)
15 min., Color, Association Films.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To inspire student design creativity with basic materials.

To acquaint students with the possibilities and the manufacture of aluminum.

SYNOPSIS:

The industrial designer creates a product not to suit himself, but to gain the acceptance of a great mass of consumers. Everyone has an opinion on how a product should look. Each design problem therefore, requires attention to function and to styling. Basic to every design approach are the materials available and applicable.

This film presents the colors and patterns possible in a basic material of the metal industry, aluminum. In a colorful and interesting sequence of production and laboratory photography, the film introduces the viewer to a vivid and exciting world of today building toward the new horizons of tommorrow.

SUGGESTED PREPARATION OF THE CLASS:

The development of metals has played an important part in man's progress. One of the most recent of these metals is aluminum. It has become the designer's answer to many problems, and suggests unlimited possibilities. The following approach to introduce students to aluminum is suggested:

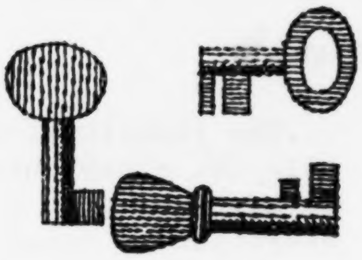
- Prepare a display of aluminum:
  Shapes: rod, tube, extruded.
  Sheets: plain, embossed, perforated.
  Cast: plain, alloys.
  Wire.
- Prepare a bulletin board display of photographs, pictures, or photo-copies of as many varied uses of aluminum as possible. Discuss the display with the class to motivate interest in aluminum and its use.
- Have students investigate and list articles using aluminum in their home and in school.

KEY WORDS:

Anodizing
Burnish
Bright-dip
Buff
Electroplating
Etching
Extruded
Function
Hard-coating
Lustre
Oxide
Perforated
Porcelain
Sandblasting

PUPILS SHOULD LOOK AND LISTEN FOR:

- Attractive presentation of the film and brilliant use of color to emphasize the main theme.
- The research and assembly of facts to develop the possibilities of industrial materials.
- The functional beauty of aluminum.
- The variety of surface finishes and textures of aluminum.
- The variety of shapes in aluminum.
- The anodizing of aluminum.
- The variety of products made from aluminum.
- The unusual mobiles and stabiles.



PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- Why must a designer look to the future?
- What is meant by "functional beauty?"
- How can aluminum add beauty as well as function to our lives?
- How is aluminum made?
- How can finishes on aluminum be mass-produced economically by industry?
- How and when is anodized aluminum used in architecture?
- Why does texture on aluminum depend on "your point of view?"
- What are the limitations to the use of aluminum?

RELATED ACTIVITIES:

- Have students conduct library research to determine the discovery and the development of aluminum. Present as a display, oral report and written report.
- Have students design or redesign products using aluminum. Then construct a prototype, or mass-produce the product.
- Encourage student research into use of aluminum in architectural design and construction. Compile a resource folder or file of pictures, photo-copies, articles, etc.
- Visit a local industry using aluminum in the manufacture of its products.

RELATED MATERIALS:

Films:

Product of the Imagination. (Association Film, Inc.) (Project CUE Film)
Seven Guideposts to Good Design. (Heath deRochemont Corp.) (Project CUE)

Booklet:

Raymond Loewy on Industrial Design. (Project CUE Booklet)

CULTURAL ITEM: "IRONS IN THE FIRE" (Film)
10 min., B & W, Contemporary Films.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the traditions, the pride in workmanship and design, and the quest for excellence of the master craftsman.

To help students learn how wrought iron work is planned and manufactured.

To point out the need for good industrial design, and to develop an appreciation for materials and an understanding of manufacturing techniques.

SYNOPSIS:

The art of iron forging is demonstrated in a little shop in St. Cesaire, Quebec, by craftsmen whose skill goes back for generations in the traditions of New France. Iron bars, fired to white heat, are transformed through the dexterity of artisans of the Martel family into delicate, lacy scrolls or life-like figure-designs. Farmers and villagers come into the shop to place an order or to walk away with the prized new possession, whether it be an artistically executed barn door hinge or a haughty rooster mounting a scrolled hotel sign. The commentator, a Martel ancestor, - reminisces about village life in his day and his own work in the forged iron trade.

SUGGESTED PREPARATION OF THE CLASS:

Film may be used to introduce a unit in wrought iron work.

Obtain display samples and photographs of well-designed and well-constructed wrought iron work, both hand-crafted and mass-produced.

Prepare bulletin board displays of the work of the iron craftsman, as utilized throughout the world: France, Italy, Portugal, Spain, Boston, Philadelphia, New Orleans, Charleston, St. Augustine and the Southwest.

PUPILS SHOULD LOOK AND LISTEN FOR:

- The adherence to revered traditions, the pride in workmanship, the love of good, hard work of the master craftman.
- Why knowledge of the past is essential to the skills and achievements of the present.
- The creative thought of the designer behind each piece of metal work.
- Design and sketching as prerequisite for actual construction.
- The need for continual practice, and a striving for excellence, to develop special skills.
- Evidence that a craftsman must know metals and the temperatures at which certain operations should be attempted.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To help students realize that appreciation for hand craftsmanship may exist side by side with admiration for quality products of mass production, point out that in a simple, self-contained, highly integrated community, the craftsman's products are made to meet specific needs. Therefore, products are not made and stored for anticipated future needs. Discuss:

- As our society concentrates on building for the future, why should we respect the principles, skills and techniques of the past?
- Is hand fabrication of the craftsman applicable to production in a large commercial iron work plant?
- Is it necessarily true that what machines produce is ugly and what is made by hand is beautiful?
- How important to a craftsman are: love of work, pride in work, practice of special skills, artistry in iron, learning from others and from the past?
- How can handcrafts promote experimentation in techniques and new materials?
- What appeal has the "human touch" in handmade products? (The products have the distinct qualities and character of the craftsman and are a natural result of their method of manufacture. His designs and techniques are the result of generations of uses. This has eliminated the bad and established the good by the acid test of time. The craftsman was and is an industrial designer or artist.)

SUGGESTED RELATED ACTIVITIES:

To further increase students' appreciation of wrought iron, engage in these or similar activities:

1. Visit a local iron workers shop.

2. Encourage observation of wrought iron work examples in the community.

3. Encourage students to study use of iron work in architecture, furniture, etc., in different regions of the United States, and the influence of other cultures upon our artisans during various periods of American history.

4. Encourage students to prepare displays, models and research papers, and to present oral reports.

SUGGESTED RELATED CREATIVE ACTIVITIES:

Students may design or re-design wrought iron articles and then make them. Suggested examples are weather vanes, house number brackets, fireplace andiron and utensils, and hinges.

RELATED MATERIALS:
Films:
Art of the Swordsmith. (Ideal Pictures)
Art of Metal Sculpture. (McGraw-Hill) (CUE)
Skyscraper. (Brandon Films)

CULTURAL ITEM: "METALWORK ART THROUGH THE AGES" (Film)
Encyclopedia Britannica Films
58 frames, Color.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the development of the art and craft of metalwork.

To stress types and uses of metal in art metalwork.

To view the skill of the art metal craftsman throughout history.

SYNOPSIS:

Man's early discoveries were mostly by chance. When compared to today's methods of research and development, it is no wonder that progress was so slow in gathering momentum. The discovery of metal and its useful properties was fortunate indeed, since it gave man a natural material that, when refined, could be readily formed into useful and lasting objects.

Early crude attempts at metalworking led to new skills. Early handcrafted products took a long time to make and could be afforded only by the wealthy. Added difficulties such as the shortage of raw materials, lack of quality hand tools, and social and civil conditions served to further hamper man's productivity. Yet the art metalwork that he did create and that has survived through the years has become, in most cases, a tribute to the skill of the craftsman. Since his productivity was often limited to only one product of its kind, it is even more priceless today than it was in his day.

This filmstrip presents a variety of examples of art metalwork handcrafted by the artisan in various periods of man's history. It discusses the basic metals used by the craftsman, and then depicts his resulting product, formed and further enhanced by his creativity and skill.

Throughout the film it must be kept in mind that the products shown are the products of man in accordance with his skills, the technology and the materials available during his lifetime.

SUGGESTED PREPARATIONS OF THE CLASS:

The best utilization of this filmstrip will be determined by the particular situation in which used. It may prove useful as an introduction to the types of metal available and provide a valuable insight into the development of metals in accordance with the needs and skills of the times. The following are further suggestions:

- Encourage student library research to determine the invention and the development of metals. Present as a display, oral report and written report.
- Prepare a display of pictures or photo-copies of contemporary art metal treasures produced by ancient artisans.

- Prepare a display of pictures and photo-copies of contemporary art metal and industrial products of metal. Discuss their functional and esthetic value.
- Have students list as many metal items as they can find in their home. Discuss in class.

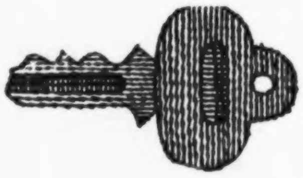
KEY WORDS:

Brass
Bronze
Casting
Copper
Enameling
Engraving
Gold
Inlaying
Lead
Oxidize
Pendant
Pewter
Silver
Copper
Utensil

PUPILS SHOULD LOOK AND LISTEN FOR:

- The types of metal commonly used in art metalwork.
- The skill of the Etruscans.
- The introduction of enameling by the Byzantines.
- The influence of religion on art metalwork during the Middle Ages.
- The chief methods of ornamenting art metalwork.
- The Cellini Cup as an example of Renaissance art metalwork.
- Oriental influence on art metalwork.
- Methods of attaching metals to each other.

PRESENT MEDIA.



SUGGESTED FOLLOW-UP ACTIVITIES:

1. Discuss with the class:

   - What metals are compounded to make the following metals and which may be used in their raw state: gold, bronze, brass, iron, silver?
   - The methods used to form or shape art metals.
   - How can metal be ornamented?
   - How early art metalwork designs and ornamentation copied animal forms.

2. To enhance appreciations from the film, display the National Gallery Print, "The Chalice of the Abbot Suger," and ask:

   - Why do highly civilized people develop highly refined skills such as art metalwork?

   Help students to realize that art is a basic need of man either as a consumer or producer and that some artists prefer to work in one medium, some another. Since gold, silver and jewels are rare, they are considered precious and gifts of them are great honors. In the Middle Ages people gave such gifts to the church as an act of piety. Kings had such articles made to impress the people with their power and grandeur.

   Today few artists work in gold and contemporary silver has sleek simple lines which bespeak our streamlined modern lives.

   Why is wrought iron work designed and made as it is?

- Were the items shown readily available to all people? Why?
- What is meant by the term "traditional style of art metalwork?"

SUGGESTED RELATED ACTIVITIES:

- Visit a local metalworking industry to observe design and manufacture of contemporary metal products.
- Visit local museums to view art metal displays when available.
- Visit local art and craft shops or gift shops and view contemporary craft metalwork.

RELATED CREATIVE ACTIVITIES:

- Have students design or redesign art metal or other metal products and construct the prototype.
- Demonstrate and encourage student application of the following:

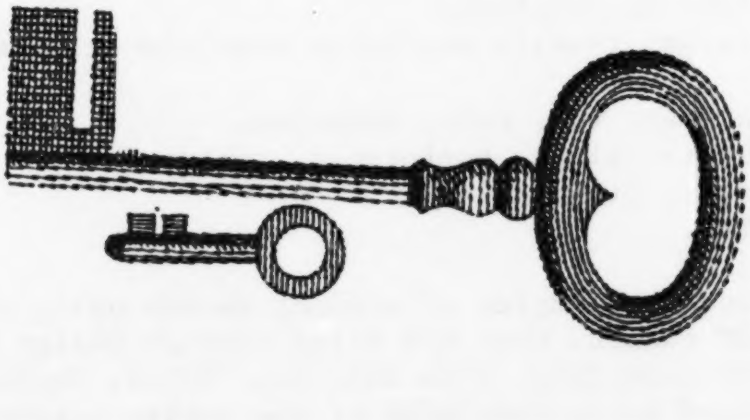
Raising
Enameling
Engraving
Etching

RELATED MATERIALS:

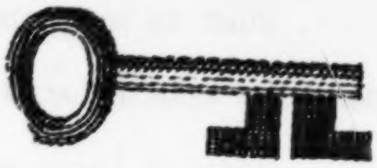
Films:

"Art of Metal Sculpture" - McGraw-Hill Films (Project CUE)
22 minutes, Color.

"Irons in the Fire" - Contemporary Films (Project CUE)
10 minutes, black and white.



CULTURAL ITEM: "PRODUCT OF THE IMAGINATION" (Film)
Association Films, Inc.
28 minutes, Color.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To assist students to understand how man can utilize his environment to his advantage through functional design, research, and experimentation.

To acquaint students with the manufacture and use of aluminum.

SYNOPSIS:

Man, since his own creation, has been a creator, an innovator of tools to build a better life. He designed, tested and improved through use, manufactured as a hand craftsman, and then developed machinery to lesson his labor and provide him with more leisure time. History has shown that man's technology and his degree of culture go hand-in-hand. Man progresses to a better way of life by continually keeping an eye to the future.

Bauxite ore has existed throughout man's history, but only recently did technology develop to the extent where he discovered its possibilities. The discovery gave birth to aluminum, a lightweight and enduring metal that can assume many forms, textures, and colors in a multitude of applications. Its future is limited only by man's creativity design and research.

This film is a colorful and creative approach to the development, manufacturing processes, and application of aluminum. The imaginative dialogue of Adam and Eve throughout the film is as entertaining as the film is informative.

SUGGESTED PREPARATION OF THE CLASS:

Research and development are basic to industry if it is to remain competitive. The aluminum industry has grown out of this precept and proposes an unlimited future. In a study of the art of industrial design, and of metals, the following is suggested to introduce the film:

- Display samples of basic materials used in manufacturing aluminum. Obtain raw materials by writing to Alcoa Aluminum, Reynolds Aluminum or Kaiser Aluminum Companies.
- Display readily available aluminum materials:

  Shapes: rod, tube, extruded.
  Sheet: plain, perforated, textured.
  Cast: plain, alloys.
  Wire.

- Display examples of product design using aluminum as provided by the Project CUE packet. (See the Alcoa Student Design Awards Folders.)
- Use this film, with the film "Color, Texture and Finish," to give students a sound basic knowledge of the design qualities, the application, and manufacture of aluminum.

KEY WORDS:

Alloy
Aluminum oxide
Bauxite
Carbon anode
Casting
Cryolite
Die-casting
Extruding
Forging
Ingots (pigs)
Reduction pot
Solar power
Wire drawing

STUDENTS SHOULD LOOK AND LISTEN FOR:

- The unique, symbolic introduction portraying the creation.
- Sources of the electrical power vital to the manufacture of aluminum.
- Raw materials required to make aluminum.
- Refining and manufacture of aluminum in its various forms.
- Uses, characteristics and future possibilities of aluminum.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To clinch concepts, discuss with the class:

- The importance of electricity in making aluminum.
- What is bauxite?
- The function of cryolite and aluminum oxide.
- Why alloy other metals with aluminum?
- How are wire and cable made?
- How are special shapes made to designers' specifications?
- Methods of manufacturing with aluminum.
- Why wasn't aluminum discovered earlier?
- Why is aluminum so adaptable to designers' needs?
- Why aluminum is used in architecture.
- How aluminum is used in fabrics.
- How aluminum provides a better way of living.
- Why does man always look to the future?

SUGGESTED RELATED ACTIVITIES:

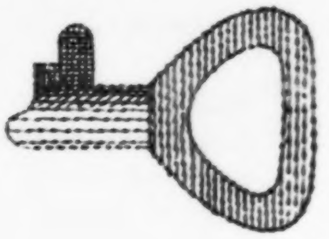
- Have students conduct library research to determine the discovery and the development of aluminum. Present as a display, oral report and written report.
- Have students design or redesign products using aluminum. Then construct a prototype and/or mass-produce the product.
- Encourage student research into use of aluminum in architectural design and construction. Compile a resource folder of pictures, photo-copies, articles.
- Visit a local industry using aluminum in the manufacture of its products.

RELATED MATERIALS:

Films: "Color, Texture and Finish" - Association Films (Project CUE)
"Seven Guideposts to Good Design" - Heath deRochemont Corp. (Project CUE film)

Booklets: "Raymond Lowey on Industrial Design" - (Project CUE booklet)
"Alcoa Student Design Award" - (Project CUE booklet)

CULTURAL ITEM: "UNISPHERE-BIGGEST WORLD ON EARTH" (Film)
14½ min., Color, United States Steel Corp.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To develop an understanding of industrial design and engineering in solving manufacturing problems.

To acquaint students with the possibilities of stainless steel fabrication.

SYNOPSIS:

Modern industry must solve complex design and engineering problems in order to compete. Although its primary concern is the function of its products, the realization that beauty and styling are necessary has become quite important.

This film presents the solution of a unique design and construction problem - the creation of a stainless steel sculpture symbolic of the 1964 World Fair in New York City. The contribution of other World Fairs and their unique architecture is reviewed briefly prior to the presentation of the design problem, the proposed solution, the testing of the solution, the prefabrication of the parts, and finally their assembly.

The excellent color, composition and music of the film present an intriguing insight into industry and some of its processes. The art of the industrial designer was never more vividly portrayed than by the stainless steel sculpture which is our latest monument to technology and progress.

SUGGESTED PREPARATION OF THE CLASS:

All World Fairs have been symbols of progress both in human (and national) relationships and industry. Each has attempted to break away from the lethargy of convention and inspire creativity. In light of this, the following suggestions are made to prepare students for the film and what it intends to convey:

- Prepare displays of Unisphere and the World Fair to stimulate interest and questions about architecture, design, construction and materials.
- Discuss past World Fairs and the creativity and progress they inspired: London (1851), St. Louis, Paris, New York (1939).
- Discuss why design, research, and advance planning are basic to success in solving production problems.

KEY WORDS:

Aerodynamics
Analysis
Beams
Computer
Design
Fabrication
Stainless steel
Structural members
Welding
Wind tunnel

PUPILS SHOULD LOOK AND LISTEN FOR:

- The purpose of Unisphere.
- The testing of the design.
- The prefabrication of the parts in the factory.
- The assembly of Unisphere on location.
- The unusual artistic and tasteful composition of the photography in presenting the construction of the Unisphere.
- How the music contributed to the tempo and excitement of the construction, and to the beauty of the presentation of the finished Unisphere.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- Why the Crystal Palace, the Eiffel Tower, and the Unisphere are called Timekeeper Symbols of Progress.
- The design and engineering problems that had to be solved.
- What is stainless steel?
- Why did the designers use stainless steel?
- How design analysis was carried out prior to actual construction.
- The advance planning necessary to expedite construction.
- Is Unisphere functional? Is it esthetic?

SUGGESTED RELATED ACTIVITIES:

- Construct a scale model of Unisphere.
- Encourage student library research about stainless steel. Present as display, oral report or written report.
- Visit a local design firm and/or a steel fabricating or erecting firm.
- Establish a hypothetical theme and have students design a symbol for the next World Fair. Then construct a scale model.

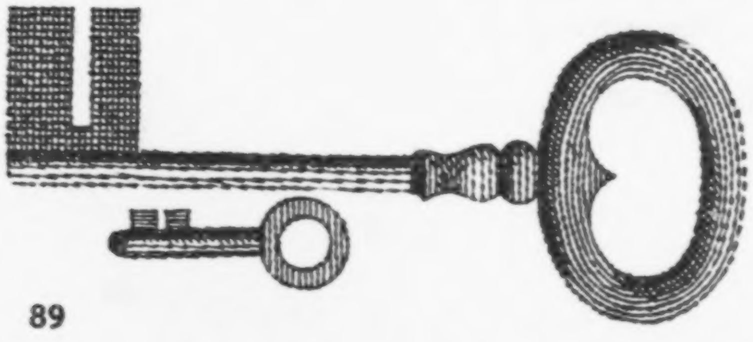
RELATED MATERIALS:

Films:

Seven Guideposts to Good Design. (Heath deRochemont Corp.) (Project CUE)
Art of Metal Sculpture. (McGraw-Hill Films) (Project CUE Film)

Filmstrip:

Metalwork Art Through the Ages. (Encyclopedia Britannica Films)
(Project CUE Filmstrip)



CULTURAL ITEM: "ANNUAL SALON EXHIBIT OF NATIONAL PRIZE WINNING HIGH SCHOOL PHOTOS"
Eastman Kodak Company

CURRICULUM AREA: Industrial Arts

PURPOSES:

To view prize-winning photographs and interest students in photography.

To develop standards for taking and developing photographs.

SYNOPSIS:

This exhibit is available on loan to all schools in the United States. The pictures include prize-winning photos taken by high school students throughout the country. The exhibit is attractively packaged and contains both black and white, and color photos.

Many subjects are represented, giving students ideas about what to look for in taking good pictures. The exhibit should make students more aware of simple everyday subjects continually about them that would make expressive and unusual pictures.

SUGGESTED PREPARATION OF THE CLASS:

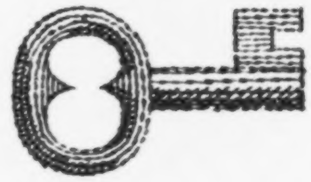
Photography as a facet of the graphic arts is a rather recent innovation. It has provided an art medium and also made possible high speed production lithography. The following suggestions are made to encourage student interest in photography:

- Encourage student library research into the invention and the development of photography. Present as a display, oral report or written report.
- Before viewing the exhibit, have students develop a list of criteria to use in rating their own photographs. Such elements as lighting, selection of subject matter, and composition of the picture might be among these standards.

KEY WORDS: Salon; photography.

PUPILS SHOULD LOOK AND LISTEN FOR:

- Selection of subjects in the prize-winning photos.
- Different arrangement of the subjects (groups, single, vertical, horizontal).
- The effect of the lighting.
- Shadow effects.
- The effect of color.



PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

Discuss with the class:

- New criteria to add to the class list on the basis on viewing the exhibit.
- Reasons the winning photos were selected.
- The comparative costs of taking some of the photos in the exhibit.
- Types of equipment used.
- Techniques used in making the photographs.
- Effectiveness of the subjects.

SUGGESTED RELATED ACTIVITIES:

- Encourage students to participate in local photography contests.
- Visit a local photographer to observe and learn his techniques. Also, the photographer may discuss his profession and training required.
- Plan and conduct a local school photography competition.
- Encourage students to form a school photography club.
- Encourage librarian to subscribe to photography magazines and obtain books.

RELATED MATERIALS:

Films:

Photography as an ArtTechnique.
(Audio-Visual Center, Indiana Univ.)

Filmstrip Set:

The Simple Camera. (CUE)

Book:

The Family of Man by Stiechen(Museum of Modern Art)

CULTURAL ITEM: "TEXTILE ART THROUGH THE AGES" (Filmstrip)
58 frames, Color, Encyclopedia Britannica Films.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To show vivid examples of the historical development of textile production.

To present designs, materials and techniques applicable in creation of textiles.

To motivate students to create, or duplicate, fabrics of good design.

SYNOPSIS:

Textiles are almost as fundamental to man as food and shelter. Somewhere in antiquity, primitive man found that natural fibers and bark could be woven into floor mats for his cave, covering for the framework of his shelter, or baskets for carrying and storing his food. He then found that finer fibers could actually be made into crude cloth.

Soon came the discovery that short animal and vegetable fibers, such as wool and cotton, could be twisted into thread or yarn. This could be woven into cloth and, in turn, made into garments and other textile necessities and luxuries. A man with wealth and status dressed accordingly. Demand for fine cloth stimulated the art of the textile craftsman. In some regions, cloth became a medium of exchange in place of money.

The ancient Egyptians left evidence of their weaving skill. Common people wore wool; the nobility and the wealthy wore cloth containing cotton and wool; the priesthood was required to wear linen.

In our hemisphere, the Incas of Peru wove woollen fabrics for all their people. Their "abstract" designs and brilliant colors indicate a high degree of culture.

The ancient Chinese produced silk fabrics centuries before Western civilizations discovered the secret. Indian and Persian design on silk is vividly portrayed in the filmstrip. The Byzantine and Moorish cultures brought the skill and delicate design of Eastern silk to Spain and Sicily.

Tapestries of the Middle Ages were not only utilitarian, but were an art form as the weaver recorded deeds and historical events of the times.

The Crusades brought knowledge of fabrics to the East. During the Renaissance, Western craftsman had perfected weaving and design techniques revolving the East's. The Guilds set proud standards of craftmanship. Embroidery and lace manufacture developed to unbelievable heights of perfection and intricacy.

The industrial revolution's production techniques made fine fabrics and decoration available to the masses, and made textile design a specialized profession. District developments in the history of textiles are use of animal skins, primitive weaving and Indian designs, religious and clerical vestment cloths, homespun and handcrafted fabrics, industrialized mass production.

SUGGESTED PREPARATION OF THE CLASS:

Since textile manufacture is an essential industry employing many people, and since all people use fabrics, it is vital for students to have basic understanding of textiles.

This filmstrip provides a fine introduction to a unit in textiles in that it gives students an interesting basic historical and technical foundation upon which future lessons may be built.

To arouse interest, display textile fabrications, using materials and techniques described in the filmstrip.

Prepare (and continually revise) a bulletin board display of pictures of textile products and processes of ancient and contemporary craftsmen and industries (see CUE Kit for examples).

KEY WORDS:

Batik
Block Print
Brocade
Damask
Drapery
Embroidery
Garment
Lace
Motif
Rugs
Shawls
Tapestry
Upholstery
Weaving

PUPILS SHOULD LOOK AND LISTEN FOR:

- Materials primitive man used to make "fabrics."
- The balance and symmetry of early textile decorations.
- The variety of natural textile materials.
- The methods used in decorating textile materials.
- The Classes of textile design.
- How the character of textiles is determined.
- The originality of Oriental and Middle Eastern textiles and the tendency of Western textile designers to imitate them.
- The vivid representation of historical events, and cultures involved, in the tapestries and fabrics of early and medieval civilizations.
- The effect of the advent of machines in textiles.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

To further understandings gained from the filmstrip, discuss these or similar topics:

. The relation of textile goods and man's welfare.
. How the ancient weaver expressed himself and his culture in his work.
. The orgin of the basic textile fibers.
. How the origin of a textile may be determined by its fiber, function and design.
. The abstract, yet geometrically balanced designs of American Indians, (Alaskan, Aztec, Inca), and their striking resemblance to much contemporary art.
. What effect machine fabrication of textiles has upon their availability.
. Development of textile art and industry reflects effort on the part of all nations.

SUGGESTED RELATED ACTIVITIES:

To further enhance learnings and appreciations:

1. Visit a local textile industry or craftsman's workshop to observe textile design and manufacture.

2. Visit local museums displaying textile goods or art.

3. Encourage library research into development of designs, materials and techniques emphasized by the filmstrip: have written research paper, display and oral report.

4. Have students experiment with basic textile materials to experience:

Natural fibers and their characteristics.
Synthetic fibers nd their characteristics.
Microsopic analysis of fibers.
Physical testing of textiles.
Chemical testing of textiles.
Spot and stain removing.

Engage the aid of a science teacher. (See CUE Kits in Home Economics and Science for materials.)

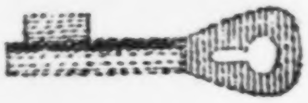
SUGGESTED RELATED CREATIVE ACTIVITIES:

Have students experiment with basic textile processes:

. Design: types of fibers, weaving, decoration of material.
. Dyeing: color analysis and color processes.
. Weaving: simple hand looms; two and four harness table and floor looms.
. Printing: block printing and stencil printing.
. Fabrication: garments, rugs, upholstery, draperies, etc.

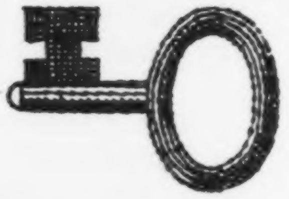
RELATED MATERIALS:

Film:



Close-up of Nylon. (Du Pont de Nemours)

CULTURAL ITEM: "FURNITURE IN FRANCE FROM THE MIDDLE AGES TO 1900"
Cultural History Research, Inc.
Slides, 30 frames.



CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the evolution of furniture through the ages, in accordance with man's technology and materials available.

To assist students to evaluate furniture in accordance with its functionalism and its esthetic expression of the society that created it.

SYNOPSIS:

Furniture design throughout history has been dependent upon its intended use, materials available, and the technology of the culture. Therefore, when any given piece of furniture is evaluated, it can be said to reflect the culture and social tendencies of the period in which it was designed.

The early ancients had furniture primarily for dignitaries. When the common people realized its utilitarian function, they began to furnish their homes. The ancient Egyptians created formal, heavy furniture and incorporated animal forms as decoration. The Greeks evolved furniture of a much less formal nature. The pleasure-loving Romans incorporated curved forms, added cushions, but still relied on copying animal forms for decoration.

Furniture of the Middle Ages was made on a grand, heavy style consistant with the castles it furnished. Its expanse was covered with often intricate surface carvings in Romanesque style. The Gothic period of religious aspiration inspired more intricate and delicate carvings on the otherwise immense furniture.

The Renaissance introduced new materials such as leather, textiles and other surface decorations, such as inlay. The English designs used heavy oak, walnut, and mahogany with inlay and painted decoration. The "Golden Age" of France under Louis XIV produced grandiose furniture carved, gilded, and often upholstered with rich brocades. The Louis XV period brought more graceful lines such as the cabriole leg.

The mid 18th century concern with classical forms improved design. as furniture became more restrained and emphasized the straight line. Napoleon's empire created furniture that attempted to copy antiques and applied heraldic devices.

Today, 19th Century Victorian furniture is fashionably derided as an incongrous mixture of over ornamentation, crass vulgarity of detail, and bad quality of execution. The typical Victorian customer had little sense of tradition, education or leisure from business to develop discriminating taste. Bad as many of these pieces are, some have a whimsical naive charm.

At the turn of the century, in revolt against overdecoration, Art Nouveau furniture reverted to simple forms. It was light, used bent wood, and attempted to represent forms of nature. Some of these results were not so fortunate but they paved the way for contemporary furniture.

The complete industrialization of manufacturing brought use of all sorts of materials. Design became purely decorative and materials were made to look like something else. Fortunately, the early mistakes of industrial furniture design have been remedied. Designers have begun to use materials naturally and forms which are suited to their use. They have successfully begun to combine function and form.

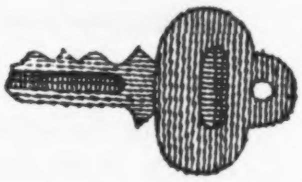
These slides show how furniture developed in France, a country that might be called typical of Western trends. It covers the period of the ancient Roman Empire until 1900. These slides will prove useful when discussing woodworking and woodworking design.

SUGGESTED PREPARATIONS OF THE CLASS:

Period styles of furniture are decorative expressions of specific times and places. It is an excellent idea to familiarize yourself with all the more important periods because designs keep cropping up over the centuries, reformed and adapted to modern living. To understand how furniture evolved gives us a better background for understanding contemporary furniture. Know your periods, and you will have professional understanding of the whole contemporary design picture.

Decorative styles of any period grow naturally out of a definite way of life. Manners and customs control design. These slides can give insight into motivations behind the designs.

PUPILS SHOULD LOOK AND LISTEN FOR:



- Roman influence on furniture design.
- The huge, bulky furniture of the Middle Ages.
- The classic detail of Renaissance furniture.
- The development of French furniture in the 17th Century.
- The ornate furniture of the Louis XIV and the Louis XVI periods.
- The simple lines and partiotic decoration of the Revolutionary period.
- Empire furniture, which copies the lines of ancient Greek and Roman architecture.
- The Gothic revival and other influences during the "Victorian Period" of the 19th Century.
- The "modern" style of furniture design that attempts to duplicate nature and create a light and airy feeling.

PRESENT MEDIA.

SUGGESTED FOLLOW-UP ACTIVITIES:

1. To insure grasp of content material, discuss with the class:
    - Similarities of ancient Roman furniture and that of the Empire Style of Napoleon.

- Reasons why medieval furniture was so large and heavy.
- Materials and skills required by medieval furniture makers.
- How the Renaissance affected furniture design.
- Cultural and social tendencies behind the ornate furniture of the 17th and 18th Century.
- The reasons for the radical change in design after the French Revolution.
- The reason for the Empire Style.
- The reason for the Victorian styles of furniture.
- The "modern" furniture at the turn of the century. How did it forecast the future of furniture in the 20th century?

2. Explain to students that while designers have been for some time following the rule that form follows function, the results of their work depended on their limited knowledge and practice. The designer today should not slavishly copy old forms. New processes and materials, new biological, psychophysical and sociological requirements bring new designs.

   - It is necessary to study possibilities inherent in the material, new techniques available, the function of the product and the characteristics of its users to design suitable contemporary products.

3. Show the film "The Chairmaker and the Boys." Explain that craftsmen in the past made beautiful and useful furniture with limited tools and wood. Today plywood, plastics, seamless tubing and the machine produce new, more functional, forms.

4. Show the Alcoa Design Forecast (CUE Kit). Discuss design trends in Aluminum furniture by Eames and other contemporary designers.

5. Display pictures of new techniques used to manufacture furniture.

6. Discuss modern furniture designs according to:

   - Originality of design.
   - Technical solution of problems.
   - Adaptability to mass production.
   - Significance of the piece in the evolution and direction of design in this country.

SUGGESTED RELATED ACTIVITIES:

- Use the "Woman's Day Dictionary of Furniture"(Industrial Arts CUE Kit) to learn characteristics of period styles in England and America.
- Display pictures or photo-copies of furniture design through the ages.
- Discuss with students how they think designs for furniture they have at home evolved.
- Visit a local furniture factory to observe design and manufacture of furniture.
- Invite a cabinet maker or furniture designer as a guest speaker.
- Have students design or redesign furniture and construct scale models. Display the result and conduct a design competition.
- Have students list various types of furniture in their home, and see if they can indicate where the idea originated, if shown by the slides.

CULTURAL ITEM: "THE CHAIRMAKER AND THE BOYS" (Film)
19 min., Color, Contemporary Films.

CURRICULUM AREA: Industrial Arts

PURPOSES:

To acquaint students with the work of the artisan-craftsman without the use of modern industrial techniques.

To assist students in comprehending the esthetic qualities of hand-crafted objects as a basis for better understanding and appreciating furniture as an art form.

SYNOPSIS:

Wood is a material organic in origin. It is not as durable as inorganic materials but its softness of texture and warmth to the touch make it suitable for objects of daily use. Such objects shaped by machine can have the beauty of precision, and when crafted by the artisan can have the individual charm of the handmade object.

When used for furniture, wood is selected and shaped to be functional and esthetically beautiful in accordance with the needs of the user. It must be designed with use in mind and constructed with craftsmanship if it is to have lasting quality.

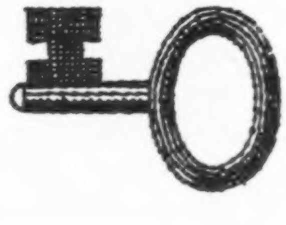
This film takes place in the Cape Breton area of Canada on the farm-workshop of a chairmaker craftsman. His philosophy and skill are subtly presented through the visit of his grandson and a friend. It is a journey back into history and the day of the artisan, presented as an adventure.

KEY WORDS:

Joint
Lathe
Penstock
Sluice
Turning

STUDENTS SHOULD LOOK AND LISTEN FOR:

- Primitive blacksmith facilities for making buggy wheel tires.
- Primitive system of motive power used to drive the lathe.
- Types of wood used.
- Traditional design of the chair.
- The wood joinery used in making the chairs.
- Turning the chair legs.
- Bending the chair back slats.
- Weaving the chair seats.



SUGGESTED FOLLOW-UP ACTIVITIES:

To encourage appreciation for craftsmanship, discuss with the class:

- The traditional design of the chair.
- The craftsmanship of the chairmaker.
- The glueless wood joinery used in assembling the chairs.
- Selection and preparation of the wood used.
- The design and operation of the sluiceway, penstock, and the drive-shaft, pulley and belt system used to drive the lathe.

SUGGESTED RELATED ACTIVITIES:

1. Have students conduct library research concerning early American furniture of the type made by the chairmaker. Present as a display - oral report and written report.

2. Demonstrate and encourage student application and experimentation with:

   - Woodworking design and planning.
   - Layouts of parts.
   - Woodworking hand tools and machines.
   - Woodworking assembly and finishing.
   - Contemporary industrial woodworking techniques and processes.

3. Have students study woods and finishes.

   - Demonstrate the difference between solid veneer and finishes, (Some cheaper woods are "finished" to look like more expensive ones,) hardwood and softwood.
   - Secure and display samples of walnut, oak, maple, birch, red gum, sycamore, knotty pine, mahogany, rosewood, satinwood prima vera avoidire.
   - Acquaint students with the patterns in some woods. Explain veneer matching.
   - Explain finishes, staining, filling, final coatings antiquing.
   - Restore the finish to worn school furniture as a project.
   - Study period furniture styles and development of furniture. (See CUE Kit materials "History of Furniture" slides and "Dictionary of Furniture.")

4. Help students realize that although contemporary furniture is mass produced it achieves beauty and charm through honest use of materials and good design. Although hand carving and other hand work does not play a part in modern furniture, exciting designs, sleek lines, interesting materials, comfort, color and easy-to-care-for qualities make it desirable and suitable for our lives.

6. Visit a local furniture manufacturing shop or factory. Invite a local furniture designer or cabinet maker as a guest speaker.

SUGGESTED RELATED CREATIVE ACTIVITIES:

- Have students design or redesign and construct the prototype of a chair.

RELATED MATERIALS:
Film:
Seven Guideposts to Good Design. (Heath, deRochemont Corp.) (CUE)

List of Producers

Aluminum Company of America
Alcoa Bldg.
Pittsburgh 19, Pa.

Association Films
347 Madison Ave.
New York, N. Y.

Bailey Films, Inc.
6509 DeLongpre Ave.
Hollywood, Calif.

Container Corp. of America
38 So. Dearborn St.
Chicago, Ill.

Contemporary Films
267 West 25th St.
New York, N. Y.

Corning Glass Center
Walnut St.
Corning, N. Y.

Cultural History Research
Harrison, N. Y.

Eastman Kodack Co.
343 State St.
Rochester, N. Y.

Encyclopedia Britannica Films,
202 East 44th St.
New York 17, N.Y.

Ford Motor Co.
Motion Picture Dept.
The American Road
Dearborn, Mich.

Franciscan Films
950 Columbus Ave.
San Francisco, Calif.

I.B.M. Film & TV Activities Dept.
590 Madison Ave.
New York 22, N. Y.

International Film Bureau
332 So. Michigan Ave.
Chicago, Ill.

International Paper Co.
220 East 42nd St.
New York, N. Y.

Jam Handy Corp.
2821 East Grand Blvd.
Detroit, Mich.

Kimberly-Clark Co.
Neenah, Wisc.

McGraw-Hill Co.
Text-Film Dept.
330 West 42nd St.
New York, N. Y.

National Film Board
Montreal, Canada

New York Times
229 West 43rd St.
New York, N. Y.

Pittsburgh Plate Glass
632 Fort Duquesne Blvd.
Pittsburgh 22, Pa.

Shell Chemical Co.
110 West 51st St.
New York, N. Y.

Two Star Film Co.
79 Babolink Lane
Levittown, N. Y.

United States Steel Corp.
Foot of Bessemer
Newark, N. J.

University of Illinois
704 South Sixth St.
Champaign, I 1

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Robert M. Brown

Associate Director, Project CUE
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No 5

project CUE

culture understanding enrichment

INDUSTRIAL ARTS

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
BUREAU OF SECONDARY CURRICULUM DEVELOPMENT
ALBANY 1963

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CUE — —

culture, understanding, enrichment, and INDUSTRIAL ARTS

INDUSTRIAL ARTS

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
BUREAU OF SECONDARY CURRICULUM DEVELOPMENT
ALBANY 1963

FOREWORD

This publication is one of five teacher guides prepared for use in Project CUE, an experimental project designed to increase cultural understanding and enrichment in the educational program by integrating carefully selected audio-visual items into the existing ninth grade curriculum in English, social studies, science, home economics, and industrial arts.

The thirteen schools participating in this experimental project during the 1963-64 school year will receive a basic packet in each of the subjects named above. The teacher guide sheets in this publication have been prepared as aids in that they suggest possible methods of presenting and utilizing with classes the audio-visual items in the accompanying packet. The thirteen schools participating in this program are:

A. J. Veraldi Junior High School, Middletown
Bronxville High School
Charles O. Dewey Junior High School, New York City
Chateaugay Central School
Draper Schools
East Greenbush Junior High School
Joan of Arc Junior High School, New York City
McArthur School, Binghamton
Niagara-Wheatfield Junior-Senior High School, Sanborn
Penfield Central School
Shenendehowa Central School, Elnora
Solvay High School
William Floyd High School, Shirley

The five basic packets and guides are presented to the schools at the start of the 1963-64 school year so that teachers will be able to use items whenever they best fit the curriculum. The items are not presented in any particular order, since it is not in any sense intended that the curriculum be shaped to their sequential use, but rather that individual items be selected by the teacher if and when they have potential for enriching the teacher's plan of work as the year progresses.

The materials contained in this packet of industrial arts should be treated as purely supplementary material for the purpose of enriching instruction. An individual teacher may decide how much of the material enclosed to use. Effort has been made to correlate the cultural items with the established program in industrial arts for grade 9. The materials should in no way be considered a substitute for the established curriculum. Caution is advised against overburdening pupils with too much stress upon the follow-up activities; pupils may find themselves spending an excessive amount of time outside the classroom on such material.

The Project CUE curriculum coordinator, assigned by each participating school system will aid the teachers to gain a working knowledge of the contents of the packets and seek the teachers' evaluation of items in the packets, using the evaluation forms provided in this publication. The curriculum coordinator will prepare summaries of the teacher evaluations periodically. As the year progresses, the reactions and suggestions of the participating teachers and curriculum coordinators will be applied to the improvement of the packets and the guides so that a carefully screened, flexible packet for each of the five subjeces and a similarly improved guide may be prepared.

The audio-visual specialist, assigned to Project CUE by the school system will see that the essential equipment is available for the effective use of the packets and assist the teachers to master the proper use of the equipment. In general it is planned that the schools will be provided with most of the materials listed in the guides.

Based upon the results in the thirteen schools, a revised guide will be published and made available for Statewide and national use at the close of the year. The guide will include results of a sampling of student and teacher interviews, designed to evaluate the effectiveness of the program.

Project CUE is being undertaken with federal funds under Title VIIB of the National Defense Education Act. It is a joint undertaking of the Division of Educational Communications and the Bureau of Secondary Curriculum Development, with the cooperation of Department specialists in the five subject areas involved. General planning for the experimental work to be done in the 1963-64 school year was participated in by the following staff members: Lee E. Campion, Director of Educational Communications; Robert M. Brown, project director; Grace Lacy, associate director of the project; Vivienne Anderson, Acting Chief of the Bureau of Secondary Curriculum Development; Mildred F. McChesney, supervisor of social studies; Elnora D. Carrino, associate in English education, assigned to coordinate the English phase of the program by Walter V. Eddington, supervisor of English education; Hugh B. Templeton, supervisor of science education, Dorothy S. Lawson, Chief of the Bureau of Home Economics Education; Vincent J. Popolizio, supervisor of art education, and Joseph G. Saetveit, supervisor of music education, served as consultants to the total project.

During the summer of 1963, the following consultants screened items for use in the five basic packets and drafted manuscripts for teacher guides in the following subject areas: social studies - Jerome Howard, teacher of social studies, Bronxville; English - William P. Manders, assistant principal and Project CUE coordinator, Bronxville;

Edna W. Morgan, acting assistant principal, John S. Roberts Junior High School, New York City; Margaret Mary Walsh, language arts supervisor, Arlington Public Schools, Pleasant Valley; science - Austin Leahy, teacher of science and Project CUE coordinator, Draper Schools; home economics - Kathryn B. McKenna, teacher of home economics, Chateaugay Central School; and industrial arts - Adrian H. Wood, vice principal and Project CUE coordinator, Chateaugay Central School.

The following Department specialists conferred with the consultants on matters related to content during their period of summer work: Walter V. Eddington, supervisor of English education; Elnora D. Carrino, associate in English education, Mildred F. McChesney, supervisor of social studies; Robert G. MacGregor, associate in science education; Dorothy S. Lawson, Chief of the Bureau of Home Economics Education; Ruth-Ellen Ostler, associate in home economics education; Arthur F. Ahr, Chief of the Bureau of Industrial Arts Education; Arthur J. Dudley, associate in industrial arts education; Robert S. Seckendorf, associate in industrial arts education. Grace Lacy, associate director of the project, worked closely with the consultants and had collected numerous items for them to review for possible use in the packets prior to their arrival. Jewell Ginn, consultant to the Division of Educational Communications, served the group as editor. Audna Clum, librarian at Averill Park Central Rural High School, helped prepare the final copy for publication. Vivienne Anderson, Acting Chief of the Bureau of Secondary Curriculum Development, coordinated the efforts of the subject specialists, the secondary curriculum bureau, the communications specialists and the consultants, working with Robert M. Brown, Project CUE Director.

The guides in industrial arts were reviewed for content by Arthur F. Ahr, Chief of the Bureau of Industrial Arts Education, Robert S. Seckendorf, and Arthur J. Dudley, associates in industrial arts education. The final editing and preparation of the guides for publication were done by Herbert Bothamley, temporary associate in curriculum.

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Curriculum Development

Warren W. Knox
Assistant Commissioner
for Instructional Services
(General Education)

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Curriculum Area: Industrial Arts - Graphic Arts--Photography

Cultural Item: (Flat Pictures) Annual Salon Exhibit of National Prize Winning High School Photos Eastman Kodak

This exhibit is available on a loan basis to all schools in the United States. Pictures include top prize winning photos which have been taken by high school students throughout the country. The exhibit is attractively packaged and contains both black and white and color photos.

Preparation of the Class:

(1) The purpose of this exhibition is to help the students develop standards for taking and developing photographs and to interest some of the students in pursuing photography as a hobby or as a vacation.

Many subject areas are represented, giving students ideas as to what to look for in taking good pictures. This exhibit should make students aware of very simple subjects around them in everyday life which make for expressive and unusual pictures. Animal life, still life, studio types, documentaries are pictured in these exhibits and do much culturally to enlighten and motivate our young people of the ninth grade level. Many phases of photography are represented in each salon exhibit.

These enlarged, mounted pictures are in transparent sleeves, 12 3/4" x 16" for easy handling. The exhibit is free, and transportation charges are paid both ways.

(2) Before viewing the exhibit, have students develop a list of criteria to use in rating their own photographs. Such elements as lighting, selection of interesting subject matter, and composition of the picture might be among the standards.

Pupils Should Look For:

- Selection of subjects used in the prize winning photos
- Different arrangements of these subjects (groups; singles; vertical; or horizontal position)
- Effect of lighting
- Effect of shadows
- Effect of color
- Objects which are ordinary, everyday subjects and make interesting photographs

Presentation of the Flat Pictures.

Follow-up Activities:

(1) Discuss with the class:

- New criteria to add to the class list on the basis of viewing the exhibit
- Reasons the winning photos were selected
- Comparative costs of taking some of the photos in the exhibit
- The types of equipment used
- Angles and other techniques used in taking these prize winning photos
- The effectiveness of using various types of subjects--humans, animals, still life, and nature
- The quotation "Good equipment will produce good pictures"
- The meaning of the following terms--salon, record, and documentary

(2) Encourage all pupils to participate in an annual picture-taking contest.

(3) Visit a local photographer and learn the technique he uses and the training necessary to become a professional photographer.

(4) Plan and present a local school exhibit of student photography, inviting the school personnel and the public to attend.

(5) Invite recognized professional and amateur photography experts to act as guest judges.

(6) Encourage the pupils to become familiar with as much equipment as possible.

(7) Encourage the formation of a photography club.

(8) Exchange ideas and pictures with other schools.

(9) Subscribe to a recognized photography magazine.

(10) Encourage reading on the subject.

Additional Suggested Materials:

(Film) "Photography As an Art" 29 min. (black and white). Audio-Visual Center, Indiana University

(Film) "Technique" 29 min. (black and white). Audio-Visual Center, Indiana University

Curriculum Area: Industrial Arts - Architectural Periods

Cultural Item: (Slides) "Architecture in France from the Romans to Today"
28 frames with text. Cultural History Research

Preparation of the Class:

(1) The teacher, before meeting with the class, may collect and bring to class source materials such as encyclopedias, art books, photographs, and other flat pictures to illustrate the better known periods of architecture--Egyptian, Babylonian, Greek, Roman, Gothic, Renaissance, Western or Early American and Modern.

(2) Architecture is the science and the art of making buildings useful and beautiful. It is a science because the architect must understand the materials and the equipment that go into buildings. It is an art because the architect considers shapes, colors, and relationships that make a building pleasing to the eye and functional.

(3) Discuss with pupils:

(a) Why were the great cathedrals, fortresses, and palaces built without steel or reinforced concrete?
(Emphasize that the principles of construction were important because steel and reinforced concrete had not been developed.)
(b) In what ways did the crusades affect architecture?
(c) What was the influence of increased commerce on French architecture?

(4) Ask some pupils to select, or be assigned, one of the major periods of architecture and be responsible for explaining the types as they are presented in the slides.

Pupils Should Look For:

In frames 1 through 3

- Examples of the influence of Roman architecture, from the 2nd to the 12th centuries, upon later French culture and architecture
- The influences of the rise of Christianity upon architecture during the early period

In frames 4 through 8

- Introduction of the Gothic form of architecture and a departure from the horizontal classical influence of the vertical soaring effect (The monastery fortress of Mont Saint Michel and Notre Dame de Paris are two of the better illustrations.)
- The use of color and stained glass windows

In frames 9 through 14

Evidences of the material and commercial prosperity and the insecurity because of war

In frames 15 through 22

New materials and types of architecture other than churches, monasteries, and fortresses

In frames 23 and 24

Introduction of metal into construction in 1755 and the expansion of architectural skills to include public projects--hospitals, hotels, schools, railroad stations, and streets

In frames 25 and 26

The Eiffel Tower
(Made of wrought iron and for many years the highest structure in the world)

In frames 27 and 28

The use of concrete reinforced with metal rods and a present-day architectural style

Presentation of the Slides.

Follow-up Activities:

(1) Ask the class:

(a) What do you understand about the French from seeing these slides?
(b) What were the main influences on the Roman architecture? The Gothic?
(c) What were some social changes that introduced the building of public projects

(2) Have the pupils sketch their own designs using one or a combination of architectural types (styles) which they have viewed in the slides.

(3) Let each pupil select one of the items shown and give a brief report on its history using pictures or drawings.

(4) Invite the art teacher to talk to the class, stressing the common denominators of all phases of art, painting, sculpturing, carving, or building.

(5) The pupils should come to realize that by combining the use of new fabrications with creative imagination, the possibilities of architecture are limitless.

3

Curriculum Area: Industrial Arts - Graphic Arts--Lithography

Cultural Items: (Prints and Booklet) "Art is Not an End in Itself, but a Means of Addressing Humanity", an advertisement of Amalgamated Lithographers of America in the New York Times, September 30, 1962, Section 2, and later reprinted.

(Flat Pictures) Metropolitan Seminars in Art
Plates 116, 117, 119, and 120 (Portfolio 10)
Plate 60 (Portfolio 5)

Preparation of the Class:

(1) Review three main printing processes.

(a) Letterpress (process)--is the printing from a raised surface, such as type or wood blocks, in which ink adheres only to high portions.
(b) Gravure--the opposite of letterpress--is printing from an image cut into a surface, such as etching or engraving where the ink stays in grooves and after remaining ink is cleaned off, is transferred to paper by being lifted out of the grooves.
(c) Lithography--is printing from a flat surface, such as a stone or metal plate. The ink is picked up from grease lines, the remainder of the plate is protected by water (principle that water and oil do not mix).

(2) Discuss Alois Senefelder's accidental discovery of the lithographic process in 1798. See page 4 of reprint of Amalgamated Lithographers of America advertisement in New York Times, September 30, 1962.

(3) Discuss Toulouse-Lautrec who, in the 1890's was the first to introduce the use of color in lithography. Ibid, page 9. See also page 5.

(4) Plates 116, 117, 119, and 120 (Portfolio 10) and Plate 60(Portfolio 5) in Metropolitan Seminars in Art are other samples of lithographic prints which may be used.

(5) Discuss other lithographic reproductions from booklet.

Presentation of Prints in Booklet and Flat Pictures.

Pupils Should Look For:

- "The message" on the posters as a functional use of art work
- The production of color
  (Each color is produced with a different stone--no intermixing or overlaying of color as in modern color production.)
- The artist-lithographer's technique of numbering the impressions
  (Materialistic values)

- The lithograph as a reproduction
  (There is no "original." The original is the stone or plate.)
- Principles of design as they apply to posters

Follow-up Activities:

(1) Review lithography as a commercial process versus the original intent as an art media.

(2) Point out contemporary four-color reproduction techniques.

(3) Review the versatility of lithography in terms of present-day uses.

(4) Collect samples of lithography, such as books, pamphlets, posters, packages, greeting cards, sheet music, calendars, and tin cans.

(5) Prepare a display of the items collected.

(6) Obtain press runs of each color of a four-color lithograph and prepare a classroom display to illustrate the process. (See page 10 of advertisement booklet.)

(7) Read on page 7 of the reprint the steps of making a lithograph.

(8) Visit a newspaper, printing, or advertising office to view actual operations.

Additional Suggested Materials:

(Painting) "Thomas Jefferson" by Robert Fawcett. Write to:
Amalgamated Lithographers of America, Local 1.
113 University Place, New York 3, New York

Curriculum Area: Industrial Arts - Metal Sculpture

Cultural Item: (Film) "Art of Metal Sculpture"
22 min. (color). McGraw Hill Films

Preparation of the Class:

(1) Explain to the class the following ideas:

(a) Lead the pupils to see that the same metals and tools used to produce useful objects are also used for purely decorative objects. Often the beauty and the function are combined, as an object may be both useful and pleasing.

(b) Outdoor and garden sculpture may be designed in keeping with the feeling of the design of the buildings. Contemporary buildings demand contemporary sculpture. Metal sculpture, which utilizes some of the same tools as are used for other metalwork objects, is one such form.

(2) Display on the bulletin board or project on the opaque projector sculpture made of wood, stone, or clay. Explain that heavy materials like stone or clay demand massive forms with heavy bases; otherwise they cannot stand up.

(3) Display wire and metal sculpture or pictures of it. Because of the inherent strength of metal, massive forms can be supported on relatively thin rods or bases. They may also have thin projections and give quite a different feeling from stone or clay sculpture.

(4) An interesting report for a pupil would be the metal casting of statues by the three different methods described in the World Book Encyclopedia, volume 16, page 194, under casting of sculpture, especially the "cire-perdue" method (a French term which means "lost wax").

Presentation of the Film.

Follow-up Activities:

(1) Discuss the following questions:

- Do you feel the sculpture fitted well into the shopping center area? Did it serve its function?
- Do you feel the sculpture was well designed and constructed?
- How did the artist decide on what metals to use to create a bouyant appearance and yet be heavy enough to withstand the weather and time?
- What precautions did the sculptor use in his work?
- How did he make use of the triangle, the most rigid of geometric designs?
- If you were on a committee to chose a sculpture for the shopping area, would you choose this type? Why or why not?

. **While it is important to follow set rules when we are learning, do you think any new ideas or method would ever be discovered if man did not experiment with material and processes?**

(2) Make designs for metal sculpture.

(3) Some students may wish to construct a metal sculpture.

Additional Suggested Material:

Designing for Metalwork, Industrial Arts and Vocational Education, January 1959, pp. 19-22

Curriculum Area: Industrial Arts - Ceramic Wares

Cultural Item: (Filmstrip) "Arts and Crafts--Ceramics Art"
58 frames. (color). Encyclopaedia Britannica
Films Inc.

The major purpose of using a selected few or all of the items in this filmstrip is to acquaint the student with the historical background from which our present ceramics industry has grown.

The products of various methods from the primitive to today's mass production techniques are shown. The examples are museum pieces of high quality.

The strip may be used to initiate interest in ceramics or it may be used after pupils have designed and created ceramic pieces to reveal to them the ancient past of the craft. Such knowledge helps them to appreciate not only the skill of the handcraft, but also the mass production techniques which enable fine ceramics to be produced in such quantity that many persons may use and enjoy them.

This strip is divided into sections representing various stages of the development of ceramics. Teachers may discuss each stage before showing samples.

Preparation of the Class:

The art of firing clay was probably discovered accidentally by prehistoric man. Ancient methods consisted of coil, slab or carving from semidry clay blocks.

Pupils Should Look For:

- The way in which pottery can help us learn about life in ancient times
- Compare shapes of ancient and modern pottery

Present and Discuss Frames 7-9.

The first glazes were developed in prehistoric Egypt.

Pupils Should Look For:

- The composition of glaze
- The beautiful turquoise glaze of ancient Egypt
- The first vigorous lifelike designs on pottery

Present and Discuss Frames 10-15.

The potter's wheel first used in China about 2,000B.C., enabled potters to achieve cylindrical shape with a speed and accuracy previously unobtainable.

Pupils Should Look For:

The way in which the Greeks used the smooth graceful pottery shapes as a surface for expressive line drawings filled with black, white and red.

Present and Discuss Frames 16-19.

The Romans started the use of molds, a quantity production technique.

Pupils Should Look For:

- How pottery is made from molds
- Some ways in which pottery may be decorated

Present Frames 20-22.

- The term "bisque" denotes that the clay has been fired but not glazed.

Pupils Should Look For:

- The carved Peruvian and Aztec pottery
- Slip decorated pottery of American Indians

Present Frames 23-28.

Seeking a white clay upon which glazes would display their purest color, the Chinese discovered porcelain.

Pupils Should Look For:

- The material of which porcelain is composed
- Chinese celadon porcelain
- Persian lustre glazes and Korean inlay ornament

Present Frames 29-35.

- Efforts to imitate Chinese porcelain led to the perfection of an opaque white tin glaze (majolica) over which bright transparent colors were applied before firing
- German efforts to find a porcelain formula led eventually to Meissenware.

Pupils Should Look For:

- Majolica from Asia Minor, Spain, Italy and France
- What inventions helped take the guesswork out of firing clays or glazes?
- What is terra cotta ware? Delft China? Meissenware? Sevres?
- What further mechanical aids were now used in making ceramics in industrialized England?
- The characteristics of Wedgewood.

Follow-up Activities:

(1) Pupils may visit a modern ceramics plant to observe modern industrial methods.

(2) Pupils may make and glaze pottery pieces.

Additional Suggested Materials:

(Filmstrip) "Making of Fine China" Lenox China Company, New York State Department of Commerce Film Library.

Curriculum Area: Industrial Arts - The Architect

Cultural Item: (Film) "Biography of Frank Lloyd Wright"
30 min. (black and white). Star Film Company

Preparation of the Class:

(1) Explain to the pupils that Frank Lloyd Wright, considered by many to be one of America's most famous architects, greatly influenced the development of contemporary architecture. In this film Mr. Wright discusses his theories of functional design and states that he felt his buildings "could change the face of America."

(2) Have pupils collect some pictures illustrating Mr. Wright's architecture and discuss the designs and materials he used.

Pupils Should Look For:

- Evidences of Mr. Wright's concept of architecture
- Evidences that Mr. Wright's designs and buildings were labeled as "not conforming" to accepted or conventional design and construction
- Examples of "organic architecture" or architecture which "grows from the earth like trees"
  (Mr. Wright used nature to complement his buildings.)
- Building materials taken from the immediate and natural surroundings of the actual construction
- The mile-high, 528-story office building designed by Mr. Wright but not yet built
- The following buildings which are examples of Mr. [illegible]ght's work:

  Taliesin, meaning "Shining Brow," in Wisconsin--his own home
  S. C. Johnson Company Building, Racine, Wisconsin
  Robie House in Chicago
  House at Bear Run, Pennsylvania
  Guggenheim Museum, New York City
  Greek Orthodox Church, Milwaukee

Presentation of the Film.

Follow-up Activities:

(1) The following questions may be discussed with the pupils:

  (a) Do the construction techniques and materials used in Mr. Wright's Guggenheim Museum compare with those of a skyscraper?
  (b) Why do you think that both the skyscraper and buildings illustrating Mr. Wright's concepts are symbols of contemporary American buildings?
  (c) How did Mr. Wright use poured concrete and prefabricated units?
  (d) How did Mr. Wright use wood, stone, metals, and glass in his buildings?

(e) How much labor and time would be required to build a building such as the Guggenheim as compared with the time and labor required to construct a comparable building of more conventional design?

(f) Mr. Wright felt that most of the architecture for the past centuries has been copied or imitated. Do you feel that this is true and how would you feel that Mr. Wright has made a contribution? Or has he?

(g) Is it good to break away from conformity and try something different, as Mr. Wright has done? Why?

(h) How would you describe Mr. Wright's design and construction principles?

(2) Have the pupils list the different tools and machinery used in constructing a building of substantial size.

(3) Have the pupils sketch their own building and by the use of card-board or some light material represent this in a three-dimensional model.

(4) Pupils may build models of some of Wright's buildings in cardboard, modeling clay or various other materials using sketches or photographs as reference. These might be placed in dioramas.

Additional Suggested Materials:

(Film) "Architecture d'Aujourd'hui (Modern Architecture)"
Museum of Modern Art Film Library, 11 West 53rd Street, New York 19, New York

Curriculum Area: Industrial Arts - Woods--Furniture Craftsman

Cultural Item: (Film) "The Chairmaker and the Boys"
29 min. (color). Contemporary Films

Preparation of the Class:

The teacher may explain that this film shows a craftsman as an artist and as a human being. Especially interesting are the facts that Mr. Hart uses no glue in his assembly of chairs and that his power is provided by an old waterwheel and penstock.

As the pupils watch this film they should keep in mind that there is beauty in simplicity and that art is not necessarily ornate or complicated.

Pupils Should Look For:

- Favorable natural resources and conditions at Cape Breton for carrying on this craft.
- Use of nature to provide materials and power in this industry
- The kinds of wood used by Mr. Hart and those kinds available to him right in his immediate neighborhood
- The variety of skills needed by one man in order to produce a chair

Presentation of the Film.

Follow-up Activities:

(1) Discuss the following questions based upon the film:

- (a) What suspense was created by the boys in the penstock?
- (b) How does water power operate the lathe in the film?
- (c) Why do you think Mr. Hart still uses this method of power?
- (d) How does Mr. Hart get away from the use of glue in assembling his chairs?
- (e) Why does he use black ash for making the strips for his seats?

(2) Have pupils collect pictures of contemporary manufactured chairs for a bulletin board display. Compare these with hand crafted chairs. If possible, have them design some contemporary chairs.

Additional Suggested Materials:

(Film) "Furniture Craftsmen" 11 min. (black and white) Encyclopaedia Britannica Films.

(Film) "Eames Lounge Chair" Herman Miller Advertising Department, Zeeland, Michigan.

(Slides) "Furniture in France - Middle Ages to 1900" 28 frames. (color). Cultural History Research
These slides show other areas and techniques in furniture craftsmanship.

Curriculum Area: Industrial Arts - Construction Techniques

Cultural Item: (Film) "Chartres Cathedral"
30 min. (color). Encyclopaedia Britannica Films

Preparation of the Class:

The purpose of this activity is to study the construction of a world famous cathedral in order to compare the construction techniques used then with the techniques used today. In preparing the class for this comparative study, discuss the following:

(1) The use of stone for walls which supported the entire structure

(2) The modern construction technique in which the outside walls are used mainly for decoration and weather control; and the interior framework of the building, a part of the supporting structure

(3) The materials available for building the cathedral during the medieval period as compared with those available for construction today

(4) The number of people required to build a cathedral such as Chartres as compared with the number required to construct a building of comparable size today

(5) The limited use of machinery in the building of Chartres Cathedral as compared with the machinery employed in building a modern structure of comparable size

Pupils Should Look For:

- Some of the basic construction principles used
- Principles of construction viewed in the film that are seen in some of our present-day churches
- Comparisons between Chartres and a modern structure in terms of materials used

Presentation of the Film.

Follow-up Activities:

(1) Review briefly the differences in the methods of constructing the medieval cathedral and a similar modern structure.

(2) Discuss how glass, wood, stone, and metals were used in construction and decoration.

(3) Discuss these statements: "The Cathedral was medieval thought in visible form." "The skyscraper is modern thought in visible form." Are they true? How?

(4) Find out how many years and how much labor were required to build these cathedrals compared with the time and labor required to construct a comparable building today.

(5) Allow some pupils find the dates of construction of Chartres Cathedral. Prepare a collection of flat pictures designed to show the contrasting materials and techniques used in modern and medieval buildings of this type. The finest examples of French Gothic cathedrals include those of Amiens, Chartres, Reims, Strasbourg, and Notre Dame.

Other cathedrals of more modern construction which might be included are the Lincoln in England; the National Cathedral, Washington, D.C.; Cathedral of St. John the Divine, New York City; and St. Patrick's Cathedral, New York City.

Additional Suggested Source:

(Film) Skyscraper. 21 min. (color). Brandon Films

Curriculum Area: Industrial Arts - Color and Form in Clay

Cultural Item: (Film) "Colour in Clay"
12 min. (color). Encyclopaedia Britannica Films

Preparation of the Class:

(1) This film points out the successful combination of art principles with modern technological methods, using a commercial pottery factory in England as the setting.

(2) The teacher may point out that every home has some piece of pottery, whether in the form of a utensil used in connection with eating or a decorative piece.

(3) Discuss the following questions with the aim of leading the pupils to realize that this craft has an ancient beginning and to compare it when it was a handicraft centuries ago with present-day production by automation in which the hands do not even touch the clay.

- (a) What developments have changed this onetime handicraft into such diversified commercial media?
- (b) In what ways have design, base material, creative expression, and knowledge of technical skills played a more imprtant role in commercial ceramics than they did in ancient times when the work was done exclusively by hand?

Pupils Should Look For:

- Inspiration that colors of nature give to the designer of the pottery
- Ways in which hands have not yet been replaced by machines
- How machines are used
- The assembly of two pieces of a cup
- Ways in which the walk-in kilns have speeded the production of commercial films
- Steps used in construction of commercial pottery (Idea, design, molds, potter's wheel, firing, glaze, transfer of design and paintings, refiring.)

Presentation of the Film.

Follow-up Activities:

(1) Discuss questions such as these with the class:

- (a) Why was so much time necessary for each of the firings?
- (b) How were machines used to increase the number of items produced?
- (c) How did the following differ--objects, shapes, designs, decorations color?
- (d) In what ways did the artistic ability of the artists combine with automation?

(2) Ask the pupils to find information on industrial uses of ceramic materials.

(3) Visit a ceramic factory, if one is nearby; or collect some items from home for a classroom exhibit, and record the different cities or factories where the pieces were made.

(4) Design and construct some molds for production.

Additional Suggested Materials:

(Filmstrip) "Arts and Crafts--Ceramic Arts" 58 frames (color).
Encyclopaedia Britannica Films, 1150 Wilmette Avenue
Wilmette, Illinois

Curriculum Area: Industrial Arts - Invention and Design

Cultural Item: (Slides) "Drawings and Models of Inventions of Leonardo da Vinci"
28 frames. (color). International Business Machines

Preparation of the Class:

Introduce the following ideas:

(1) Evolution of invention up to the Machine Age was slow as contrasted to the rapid advances of our lifetime which are due, to a great extent, to the ability of people to experiment, discover, develop, and fabricate new materials into products.

(2) Leonardo da Vinci (1452-1519) was one of the greatest creative geniuses of all time. We think of him as the painter of famous paintings like the "Mona Lisa" and "The Last Supper," but he was also the greatest experimental scientist of his age. He was a botanist, an astronomer, a geologist, an anatomist, and a civil and military engineer, as well as musician, sculptor, architect, and inventor.

He was often employed by the dukes of north Italy as a painter, sculptor and architect. When the dukes were at war, which was often, he designed fortifications and war equipment for them, the breech-loading cannon, and an armored tank.

Sometimes he invented machines to illustrate or to prove a scientific principle. He realized that there is a relationship between artistic and structural form, that art and technical knowledge are interrelated.

Prior to the discovery of America, da Vinci, who was a contemporary of Christopher Columbus, was sketching and building models of a steam gun, paddle wheel ship, air-conditioning unit, hydraulic pump, a parachute, and a flying machine.

Pupils Should Look For:

- Evidence that da Vinci was a dreamer or a theorist
- Inventions which had practical applications
- Forerunners of some of today's inventions and scientific developments
- Evidences that da Vinci was hundreds of years ahead of his time as indicated by his work and with the following:

Machine gun
Paddle wheel ship
Automatic printing
An odometer
Parachute
Air-conditioning unit
Clock mechanism
Flying machine

Presentation of the Slides.

Follow-up Activities:

(1) Have members of the class find pictures or other materials which illustrate da Vinci's achievements as an architect, inventor, designer, experimenter, and engineer.

(2) Pupils may wish to trace further the development of some of da Vinci's major projects and find out when these items became perfected to the point of usage.

(3) Have the pupils discuss the following: "How could the division of labor, working conditions, automation, experimental laboratories, economic system, and the social structure in contemporary America help or hinder da Vinci in the persuit of his interests and abilities if he were alive today?"

(4) The pupils might plan a small scenic representation of three-dimensional models, using their own reproductions of da Vinci's drawings and models or they could compare items with their contemporary counterparts.

(5) The pupils might easily construct a parachute (drawing No. 17) and, using appropriate weights, test it for effectiveness of design and construction.

(6) Some pupils could select one item, sketch it to scale, and prepare a bulletin board to exhibit the results.

Curriculum Area: Industrial Arts - Metals-Wrought Iron

Cultural Items: (Film) "Irons in the Fire"
10 min. (black and white). Contemporary Films

(Flat Pictures) Steelways. May 1963

Preparation of the Class:

(1) Explain that for effects of quaintness and charm, fine wrought iron has much to offer. America has many beautiful examples of this craft in some of the old sections of our older cities (Boston, Philadelphia, New Orleans) in fences, gates, lamp brackets, hinges, balconies, and foot scrapers.

Artisanship in wrought iron through the years was and is rare, the result of special drawings and patterns for each buyer; and its handsome products are accordingly expensive.

(2) This film shows a French-Canadian family carrying on this tradition. Keep in mind that as our society has changed, so has the appreciation for the artisan's craft. The change has been from art to a practical product.

(3) This film may be used in connection with the following:

(Film)	"Art of Metal Sculpture" 22 min. (color). McGraw-Hill Films
(Film)	"Skyscraper" 21 min. (color). Brandon Films
(Filmstrip)	"Metalwork Art through the Ages" 58 frames (color). Encyclopaedia Britannica Films
(Slides)	"Drawings and Models of Inventions of Leonardo da Vinci" 28 slides (color). International Business Machines.

Pupils Should Look For:

- The use of design and sketching as a prerequisite for the actual construction of any creation
- Reasons that a knowledge of the past is essential to the skills and achievements of the present
- Reasons that time was not a serious consideration in this family craft, whereas it would be in a large commercial plant doing similar construction
- The creative thought of the designer back of each piece of metalwork
- Evidence that a craftsman must know his metal and the temperatures at which certain operations should be attempted

Presentation of the Film.

Follow-up Activities:

Discuss with the pupils reasons for the following:

(1) Why it is necessary to know the principles of design and the properties of iron before attempting to shape an object of iron

(2) Why iron is heated to a white fluid heat before the welding of two pieces may take place

(3) Why it is important to this family to continue this craft in the tradition in which it has been inherited

(4) Why the hand methods used in making the scroll and rooster would not be applicable in a large commercial iron plant in the production of the scroll and rooster.

(5) Why some people prefer to have the work done by hand, when iron objects may be purchased at a hardware store or through a catalogue.

(6) Review flat picture of section of wrought iron fence on Steelways flat picture. Contrast this with the woven chain link fence on the reverse side. Discuss with the class why this type of fence is now so widely used.

(7) Pupils may design and make various wrought iron articles such as coat racks, lampbases, shelf brackets, house numbers

Additional Suggested Materials:

(Film) "Art of the Swordsmith" (Free). Ideal Pictures Information Service, Consulate of Japan, 235 East 42nd Street, New York 17, New York

Curriculum Area: Industrial Arts - Alloys

Cultural Item: (Filmstrip) "Metalwork Art through the Ages"
58 frames. (color). Encyclopaedia Britannica
Films

Preparation of the Class:

(1) The purpose of this filmstrip is to show a comparison between the use of base and alloyed metals in the home and their use in the industrial and commercial areas, and to suggest that by accident or experimentation, man discovered he could do many things with metals that he could not do with stones, wood, or bones.

(2) The teacher may wish to use only a portion of this filmstrip in a single class session, or select certain areas to use at different times during the course sequence on metals.

(3) The pupils should keep constantly in mind that this filmstrip shows but one facet of man's culture and expression. They should be made aware of the contemporary applications of the metals mentioned.

(4) The pupils will better understand and perhaps appreciate the skills represented by the products shown in the filmstrip after they discuss the following:

- (a) Why were gold and silver two of the first metals used by mankind?
- (b) Why isn't gold used so extensively today as a decorative metal?
- (c) In what different ways may bronze (an alloy of copper and tin) be used?
- (d) What is the effect of metal casting on: the variety of forms made and the number of items produced.
- (e) How are molds employed to a great degree in foundries and factories in today's industries?
- (f) What evidence can you find which supports the value of iron and the development of steel in today's living? Consider such areas as industry, tools, cooking utensils, recreation, and the space program.
- (g) How did ornamentation of metal craft work affect its appearance? How is it used today as a medium of advertising and marketing?
- (h) What monetary value is there to having a craftman's name stamped upon his work?
- (i) Why has lead (which in its natural state is limited in use as a metal) become desirable for use in many products when alloyed with other metals? What are some products made from these alloys?

Pupils Should Look For:

- . A gold vessel made 5,000 years ago for a near eastern king
- . Cast bronze altar vessel made in China 1,000 years before Christ
- . A silver cup made in Ireland between the 6th and 11th centuries

- The ornamented vessel made by the Etruscans
- Wrought iron of 13th century France as shown on the hinge of Notre Dame Cathedral
- Metal inlay of gold and silver as used on a pitcher made in 13th century Persia
- Brass tablets used in English graves
- Gold-enameled cup by Cellini, most famous Renaissance craftsmen
- An item in pewter, a substitute for silver
- Metal plate armor used for combat
- An example of tin used in the American colonies
- Copper items of 19th century Africa
- Silver jewelry of the American Indians
- Russian samovar

Presentation of the Filmstrip.

Follow-up Activities:

(1) Discuss the following questions with the class:

(a) What two metals, found in the raw state, were most easily and commonly used in early metal craft work?
(b) Which metals used may be easily alloyed with other metals? Name some combinations? In which forms would you find them used today?
(c) What were some of the methods employed in the shaping of metals?
(d) How are the shaping and prefabrication of metals affecting mass production in the automotive and building industries?
(e) How were many of the items decorated? Do you feel that this ornamentation added or detracted from the design, beauty, or utility of the examples?

(2) Design a wrought iron article.

(3) Secure pictures and materials of metalwork representing ancient, medieval, and contemporary civilizations and prepare a display or bulletin board.

(4) Mention some commercial metal products of pleasing appearance and explain why they look attractive.

(5) Ask each pupil to select from the items shown the one he liked best and point out the reasons for his choice. Have him include materials used, shape, design, ornamentation, utilization, and contribution it may have made to the advancement of the metal industry, if any.

(6) Visit a local metal company, foundry, automobile plant, or assembly line and learn how molds, shaping, prefabrication, design, and tools are being used to increase the utility of base metals and their alloys.

(7) List the number of different metal items the class comes in contact with and those which they feel are really essential to the life of their community.

(8) From metal sheets or rods have each pupil design and create an item that he may use for himself or give as a gift.

Additional Suggested Materials:

(Film) "Art of Metal Sculpture" 22 min. (color). McGraw Hill Films

Curriculum Area: Industrial Arts - Printing

Cultural Item: (Film) "The Modern Lithographer"
10 min. (black and white). Encyclopaedia Britannica Films

(Flat Pictures) Toulouse-Lautrec prints or posters

Preparation of the Class:

The teacher may explain that in primitive times the only pictures man could have were those he drew himself. In the Middle Ages and till almost modern times, great art and pictures in general were available only to the wealthy who could afford them. It was discovered in the 18th century how to reproduce many pictures from a single drawing. This process is called lithography. This process was first discovered in 1796 by Alois Senefelder in Germany.

Lithography is a process of drawing on limestone with greasy ink. The stone is then wetted. When inked, the water repels the printing ink and it adheres to the greasy inked drawing. When paper is placed on the stone and rolled, a print is made. Toulouse-Lautrec made many such printed posters and popularized the art. Several prints could be made from a single drawing, thereby reducing the cost. Modern invention and mass production have carried this art still further through offset photo lithography which produces thousands of prints and makes reproductions of fine art available to everyone at a small cost as well as producing the thousands of colorful posters, magazine, and paper illustrations we see about us daily.

Pupils Should Look For:

- How stone lithographic prints are made
- What arts and techniques combine to make offset lithography possible (Lithography, photography, modern printing)
- How color is reproduced, four-color reproduction techniques (Four plates--yellow, red, blue, and black--are made. When superimposed they form the multicolored who e. Plates are printed in sequence.)
- The offset press

Pupils Should Listen For:

- How the plates are superimposed (registration)
- Why the color is broken into dots (for sharper color)
- What is used now to make plates water repellent (chemicals)

Presentation of the Film.

Follow-up Activities:

(1) Discuss with the class why offset lithography is the "life blood" of commercial art and advertising.

(2) View posters of Toulouse-Lautrec in Metropolitan Seminars and, if available, travel posters.

(3) Visit a lithography shop.

(4) Obtain press runs of each color of a four-color lithograph and the finished product.

(5) Do some lithography if materials are available.

(6) Make a four-color print using registration marks in any of the following media:

- **Linoleum block**
- **Stencils**
- **Screen process printing**

Curriculum Area: Industrial Arts - Leathers--Saddlemaker

Cultural Item: (Film) "The Saddlemaker"
17 min. (color). National Film Board of Canada

Preparation of the Class:

(1) The purpose of this film is to study the use of leather as related to an industrial item. It shows an example of outstanding leathercraft for commercial purposes.

(2) If possible visit a leather shop or supply house where pupils may examine saddles for design, types of construction, ornamentation and texture. Leather hobbyists may supply samples to inspect. If possible secure pictures of beautiful silver decorated western saddles.

(3) Ask the pupils to select leather items of their own and bring them from home to display them.

(4) Discuss with the pupils the types of leather used commercially and the reasons that certain kinds of leather are better than others for the uses indicated.

(5) List on the chalkboard as many leather items as the pupils may recall.

Pupils Should Look For:

- The grading of leather for each specific function in the construction of the saddles
- The different types and variety of tools used
- The use of adhesives and special tools in shaping and joining the different parts
- The method of transferring the pattern from the sketch to the leather
- The use of carving, coloring, and ornamentation

Presentation of the Film.

Follow-up Activities:

(1) Discuss with the pupils:

(a) What major steps were used in assemblying the finished product?
(b) What were the names of the tools used? What was the specific function of each?
(c) What are some retail uses of leather? What are some industrial uses? (The pupils might list leather items that may be purchased in the local community.)
(d) Is saddlemaking and leathercraft an important industry? Why?
(e) Why might you like leather as a material with which to work?

(2) Collect data on the opportunities available in the leather industry and the pay as compared with other types of skilled or semiskilled work.

(3) Have the pupils sketch, design, and construct items of their own in leather. (Suggestions and procedures in leathercraft may be found in Creative Crafts, a publication of the Bureau of Secondary Curriculum Development, New York State Education Department, Albany.)

Curriculum Area: Industrial Arts - Industrial Design

Cultural Items: (Film) "Seven Guideposts to Good Design"
15 min. (color). Heath de Rochemont Corporation

(Booklet) Famous G M Cars

(Flat Pictures and Booklets) Raymond Loewy on Industrial Design
Two booklets by Shell Chemical Company
Division of Shell Oil Company

Preparation of the Class:

(1) Ask pupils why designers have changed their techniques and ideas through the ages. Such factors as the following may be brought out during the discussion.

- Kinds of materials available
- Kinds of tools, machines, and equipment available for use
- Purpose of the design
- Kind of education the designer had
- Ability of the designer to change with the times

(2) Have pupils collect flat pictures showing evolution of the airplane, the telephone, and the dispenser. Ask pupils to compare the differences between an early airplane and today's streamlined model. Contrast early and modern cars. Much of the difference in the success and speed of these models is due to changes in design, technology, and materials.

(3) Explain that in order to discriminate between the good and the less desirable in design, to know what to keep and what to discard, we must have certain criteria or guideposts to help us decide what is good design. This film will help us to learn what those guideposts are.

Pupils Should Look For:

- Good design in which form follows function
- Humanization in design
- Honest and appropriate use of material
- Shaping processes shown as part of a design
- Good structural relationship of parts
- Economy of material and effort
- Pleasing color, texture, appearance, and shape

Presentation of the Film.

Follow-up Activities:

(1) Discuss items under "Pupils Should Look For." Help the class to put the seven principles for good design into their own words, such as:

- Suitability to the job
- Suited to user

- Materials appropriate to use
- Shape suited to use
- Well related parts
- Economy of time, effort and material in manufacture.
- Pleasing color, texture, line form and shape

(2) Discuss the question, "What are some possible advantages and disadvantages to making an object or to using materials that assume the appearance or function of another object? (For example, salt and pepper shakers shaped like golf balls or pewter made to look like silver)

(3) Display samples of material to illustrate their natural beauty--grain in wood, color of metals, texture of stone.

(4) Use the opaque projector to show flat pictures in the Shell Company booklets, Discussions in Design and 23 Ideas for Tomorrow's Packages in Shell Plastics; and discuss modern container designs pictures.

(5) Have pupils bring to class containers and other articles for a table display. Let them judge the design of these articles according to the guides to good design in the film.

(6) Have pupils design and construct containers or small articles to be made from tagboard; plastic; and sheet metal, such as tinplate, copper, brass, or aluminum. Some may wish to render these designs.

Additional Suggested Materials:

Film: "Design" Bailey Films

Filmstrip: "Creative Design" Dr. Konrad Prathman 2787 Milburn Avenue, Baldwin, Long Island
"Good Design" Herman Miller Advertising Department, Leeland, Michigan

Periodicals: Be Design Conscious by M. De Fourny, Industrial Arts and Vocational Education, October, 1960, p. 58
The Joy of Creative Design by Rufus Jacoby, School Shop, March 1955, pp. 10-11
Function and Design by John R. Lindbeck, Industrial Arts and Vocational Education, June, 1960, pp. 20-21
Good Design--What is It? School Shop, June, 1958, pp. 10-11

Curriculum Area: Industrial Arts - Architectural Design

Cultural Item: (Film) "Skyscraper"
21 min. (black and white, and color). Brandon Films

Preparation of the Class:

(1) The film "Chartres Cathedral" could be shown before presenting "Skyscraper", and the 30-minute film "Biography of Frank Lloyd Wright" might be shown as a follow-up.

(2) Display the four pictures included in the packet of a pyramid, the Greek Parthenon, a medieval castle, and an example of contemporary architecture. Each of these represents an era.

(3) Discuss with the pupils the following areas with the four pictures as the focus of interest.

- (a) The general shape of each building
- (b) Materials used in construction
- (c) Function of each building
- (d) Length of time in construction
- (e) How, with primitive methods, it was possible to build these structures
- (f) How, with modern methods, it is possible to build a contemporary building

(4) Point out that with the use of modern know-how and materials, buildings have been built at least twice as high as the highest pyramid and in a fraction of the time it took to build the pyramids. The skyscraper in the film typifies America's industrial society. Observe its construction from the drawing board to the completed interior.

Pupils Should Look For:

- The use of girders, materials, machinery, and tools as elements of construction
- Creative artistry of the photographs
- Patterns of design, highlighted by textures (example, aluminum siding), which have transformed the base construction materials into an artistic architectural expression of our culture
- The use of color outside and inside of buildings which blends with the simple forms and textures
- The number of industrial skills required to join forces to make one skyscraper possible

Pupils Should Listen For:

The way the producer sychronized the rhythm of music and the sounds of a big, busy city at work.

Follow-up Activities:

(1) Discuss with the pupils the following questions:

(a) How was the labor divided among the skilled craftsmen and the unskilled workers?
(b) What operations did you see?
(c) What advantages were gained by using prefabricated aluminum and glass forms?
(d) How did this film help you to appreciate the creative and engineering skills of American workmen?
(e) Why do you feel that the modern simplicity of design which is repeated throughout the building is a pleasing form of architecture? Why do you feel that it is not?
(f) What are your reactions toward contemporary design of structures as compared to traditional ones?
(g) Why would you be for, or be against, a whole city of similar buildings?
(h) Do you feel that the skyscraper symbolizes America?

(2) Ask the pupils to prepare a display using pictures which show examples of contemporary, Greek, Roman, Gothic, and Egyptian architecture; and discuss the various forms as to design, materials, utility, and beauty. If possible, secure three-dimensional objects to display.

(3) Build dioramas containing the above-mentioned structures (a pyramid, the Parthenon, a medieval castle, and a contemporary building). Post information about the structures, such as the type of material, the method of construction used, the date and length of time of construction and the purpose of the building.

(4) Lay out a planned city, construct models of various structures.

Additional Suggested Materials:

(Film) "Aluminum on the Skyline" Aluminum Company of America, 818 Alcoa Building, Pittsburgh 19, Pennsylvania

Curriculum Area: Industrial Arts - Ceramics--The Potter

Cultural Item: (Film) "The Story of Peter and the Potter"
21 min. (color). Contemporary Films

Preparation of the Class:

(1) The film illustrates the steps of developing a ceramic project and the tools and materials used.

(2) The industrial implication is shown in the commercial items manufactured in a privately owned pottery shop.

(3) The pupils will see that the procedures used in this shop are basically the same as those employed in large ceramic factories and have been practiced for thousands of years.

(4) The pupils should review the term "ceramics" and be familiar with the following other terms: clay, kiln, slip, glaze, potter's wheel, firing, and mold.

Pupils Should Look For:

- The tools and materials used
- The use of colors in nature as they influence the artist's designs and coloring
- The need of project planning in advance of actual operation to indicate proper consistency of materials and good form
- The importance of careful timing in firing and glazing

Presentation of the Film.

Follow-up Activities:

(1) Plan and make a simple ceramic bowl.

- Decorate the bowl by carving it or by means of piercing or otherwise decorating a leather-hard or dry clay coil and applying it to the surface of the bowl
- Decorate the bowl by slip painting and slip tracing with plain or colored slip

(2) Discuss why there is a greater satisfaction in creating one's own ceramic piece than purchasing a commercial item of similar form and pattern.

Additional Suggested Materials:

(Film) "Color in Clay" 12 min. (color). Encyclopaedia Britannica Films
(Film) "Clay in Action" 12 min. (black and white). Encyclopaedia Britannica Films
(Filmstrip) "Arts and Crafts - Ceramic Art" 58 frames. (color). Encyclopaedia Britannica Films

Curriculum Area: Industrial Arts - Fibers and Fabrics

Cultural Items: (Filmstrip) "Textile Art through the Ages"
58 frames. (color). Encyclopaedia Britannica Films

(Flat Pictures) "The Miracle of Metallic Yarns of Aluminum"

Preparation of the Class:

(1) The teacher may wish to use only a portion of this filmstrip or show parts of it at different class sessions.

(2) Have pupils read a general history of the development of textiles. Study how primitive men used nature's ready-made materials (reeds; leaves; and hides). In the Middle Ages master weavers developed products in a highly skilled craft and were followed by modern commercial mass production.

(3) Help pupils to become aware that the character of textiles is determined by:

(a) Kind of fiber--silk, wool, linen, cotton, hemp, synthetics
(b) Weave and the pattern
(c) Materials made from the fibers--yard goods, rope, yarn
(d) Fabricating materials into products--rugs, garment, draperies, shawls

(4) Certain fibers are associated with the country in which they are grown. Ask a pupil to list kinds of fibers on the chalkboard as each is named by the class, then write beside each fiber the country or countries where produced.

silk	Japan, China, Thailand ...
cotton	Egypt, United States ...
wool	Australia, England, Scotland, Kashmir ...
vicuna (finest wool)	Peru, South America ...
hemp	Manila, Philippine Islands ...
linen	Ireland ...
synthetics (nylon, dacron, glass)	United States ...

(5) In preparation for this filmstrip pupils should be familar with the following terms and the characteristics which distinguish them from the other terms used in the area of textiles. A knowledge of these terms will help to stimulate a curiosity to see examples of the types represented.

tapestry
motif
embroidery
rugs
drapery
shawls
damask
garment
brocade
weaving
lace
upholstery
block print
batik

Pupils Should Look For:

In frames 7 through 25, use of natural fibers

Survey of textiles beginning with the primitive use of nature's ready-made materials and the variety of ways in which they were used.

- Color-design-construction-variety of materials
- Bark mat from the Marshall Islands
- Fur rug from Siberia
- Silk from the Byzantine Empire
- Llama and vicuma wool tapestry from Peru
- Cotton bag of Peru
- Embroidery of 11th century France
- Linen and wool church garment
- Motif of the 16th century
- Tapestry of 13th century
- Rugs of wool and silk from Persia

Expert weavers who fled from France to England helped to develop England's great cotton textile industry. Weaves and names such as "chintz" and "muslin" from India were adopted.

In frames 27 through 29, expert weaving showing India's influence

- Examples of Indian design
- Shawl of Kashmir wool

Color permanence in antique textiles is due to the use of fast vegetable and animal dyes.

In frames 31 through 43

- Damask of two-toned Chinese silk
- Brocade worn by Marie Antoinette of France
- Woven Venetian silk

Beginning in the 14 century, European lace was made exclusively by women mainly as costume accessory and trimming.

In frame 45, use of lace work

Lace collar worn by a 16th century gentleman

The two major classes of textile design are: (1) those suitable for evenly spaced repetition in yard goods and borders, and (2) those planned for non-continuous units such as rugs in which larger motifs are usually enclosed by borders.

In frames 49 through 54, continuous and noncontinuous designs

- Hooked rugs of cloth strips of colonial America
- Colonial cotton comforter
- Chintz used in upholstry
- Block printed linen design

Presentation of the Filmstrip.

Follow-up Activities:

(1) Questions such as the following may be discussed.

- (a) What are the chief natural textile fibers?
- (b) What is the source of silk and where was it first made?
- (c) What are the similarities and differences between a Persion rug and European tapestry?
- (d) Which type of design is necessarily more angular, the woven or the printed?
- (e) Why is color so important in the designs shown?
- (f) Discuss the importance of color and design as they affect the marketing of textiles.
- (g) From this film on texture, can you associate various examples of texture from the fabrics shown? Which ones?
- (h) Which do you think is more important, design or texture? State reasons supporting your preference.

(2) Make a colored design for a woven or block print textile.

(3) Prepare a follow-up bulletin board or display showing pictures or actual items that would illustrate some of the materials, designs, or textures shown or talked about.

(4) Compare natural fibers with synthetic fibers such as nylon and dacron. Subject them to various tests such as "in the hand" feel, microscopic tests to regard texture of fibers, wetting to compare drying times, and porosity, subjecting to heat to note characteristic reactions and burning to note characteristic ash. See the film "Close-Up of Nylon" by Pont de Nemours Co. available free from New York State Department of Commerce Film Library.

(5) Have the pupils weave samples of tapestry; hook a rug, and do pile knotting.

(6) Plan a colonial braided rug.

(7) Compare hand weaving with production in a contemporary carpet mill.

Additional Suggested Materials:

(Book) Fifty-second Studio Yearbook, 1962-63. "Decorative Art in Modern Interiors" New York, Viking Press

Curriculum Area: Industrial Arts - Stained Glass

Cultural Item: (Flat Pictures) "Thoughts on a Stained Glass Manual for Architects"
Craft Horizons Magazine

Romance of Glass, Pittsburgh Plate Glass Company

This is Glass, Corning Glass Works

Preparation of the Class:

(1) Review with the pupils the term "ceramics."

- (a) In the United States the term is used for all products formed from nonmetalic, inorganic, earthy materials.
- (b) In Europe the term is applied only to products formed mainly from clay, which is a nonmetalic, inorganic, earthy material.
- (c) Use either in addition are such subdivisions as refractories, clays, abrasives, porcelain, pottery, and glass.

(2) Explain that glass, while one of the ceramic family, is unlike most other ceramics in that it possesses high optical properties. It is obtained by mixing inorganic materials and melting them together at a high temperature.

The four basic types of glass, considered from the standpoint of manufacture are: (1) flat glass, (2) blown glass, (3) pressed glass, and (4) special glasses, including fiber glass, tubing, and scientific glassware.

(3) Discuss with the pupils:

- (a) The terms and uses of glass which are familiar to the pupils in the home, in the school, in industry, in toys and clothing, in the space program and in churches
- (b) The use of stained glass windows that pupils have seen in their community, especially in public buildings and churches

(4) Have some of the pupils do research and find examples of stained glass work.

(5) Other pupils might find what stained glass is and how it is used by the builder or architect.

Pupils Should Look For:

- Ways in which the modern architect might use stained glass in his design
- What an artist must take into consideration before he designs a stained glass window or decoration. A few of these are:

Style of architecture
Amount of light the window will get

The distance from the viewers
The direction from which it will be viewed

- The author's suggestion as to the place to use stained glass in modern architecture
- The examples of transparency and solidity
(See Illustration 2 on page 28 and Illustration 5 on page 33)
- The use of lines, colors, proportion, balance, texture, and transparency as used in the examples shown on page 29, 30, 31, 32
- The ways in which the author suggests the uses of light, color, texture, and transparency
- The stained glass compositions recently created for offices and apartment buildings by Mariette and Alistair Bevington
- The two and three-dimensional ideas used in the engineering of flat or sculptured glass

Presentation of the Pictures.

Follow-up Activities:

(1) Discuss the commercial implications of stained glass as an art today with the original uses in cathedrals and churches.

(2) Discuss the creativeness of the modern artists with those of medieval times. Compare ancient and contemporary designs in stained glass. Which do you prefer? Do you feel each style is appropriate to the architectural style of its time?

(3) Look up the names of the following men and find how they contributed to the commercialization of stained glass in the late 19th and early 20th centuries.
Louis Comfort Tiffany
John LaForge
Charles J. Connicle
Wilbur Herbert Burnsham

(4) Look for examples of contemporary stained glass windows. The following:
Cathedral of St. John the Divine
St. Patrick's in New York City
Grace Cathedral in San Francisco
St. Ann's Church in St. Louis

(5) Ask the pupils to prepare a bulletin board, and show flat pictures of the medieval era and the contemporary era.

(6) How has the author suggested that stained glass be used as a third medium between the solids and the voids in the walls of modern buildings?

(7) Review the versatility of stained glass in terms of present day design and architecture.

(8) Design and construct a small stained glass window, or design one by using colored cellophane or plastics

(9) Excellent stained glass designs may be made by securing left over bits of glass from stained glass making shops. Colored glass may be secured from bottles, dishes, and vases. Use glass cutter to cut glass into desired shapes. These pieces may then be glued to clear glass of other background with all purpose clear drying glue.

Additional Suggested Materials:

(Booklets) "Sand and Imagination" and "Glass in Science and Industry"

(Films) "Engineering with Glass", 28 min. (color). Associated Films
"The Nature of Glass" 37 min. (color). Associated Films
"Glass and You" 28½ min. (color). Associated Films

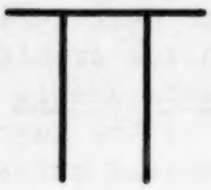
Curriculum Area: Industrial Arts - Materials and Forms

Cultural Items: (Slides, Tearsheets, Photos, Drawings) Types of Structures
Steelways, March 1962
Steelways, March 1963

Preparation of the Class:

Discuss with the class that architecture is the science and the art of making buildings beautiful and useful. It is a science because the architect must understand the materials and equipment which go into buildings. It is an art because the architect uses shapes, colors, and relationships that make a building pleasing to the eye as well as a comfortable place to which to live.

Presentation of the Chart.



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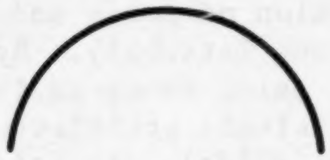

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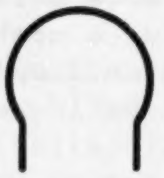

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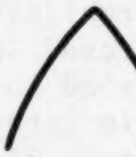

4

In very early days the Egyptians, Assyrians, and Greeks made buildings of wood, dried brick, and stone. They used the post and lintel type of construction. This construction necessitated strong, thick walls and columns. Window openings were small or nonexistent.

The use of bricks and stone in buildings made possible the use of the arch, one of the most important discoveries in architecture.

The arch consists of wedge-shaped stones or other materials placed together to form a curved bridge. These arches usually have a keystone in the center which binds the whole together. The downward pull of gravity and the weight of materials above on the wedge-shaped parts cause the sides of the arch to spread out. This outward force is called a thrust. To make an arch secure, the thrust must be countered by heavy masses of masonry called buttresses or by other arches as in an arcade. The semicircular arch is the most common form. Other types include the horseshoe arch (Example 3) and the lancet (pointed) arch.

The Romans used arches for city gates, bridges, aqueducts, and monuments to commemorate events of triumph.

Presentation of the Slides and Pictures of the Arches of Trajan.

They used the vault--a structure related to the arch which enabled them to put a roof over wide spaces without interior supports. An example of one of the greatest uses of the vault is the Pantheon in Rome. The building is covered by a huge dome over 140 feet high and 40 feet wide.

Slide of Pantheon in Rome

The use of great arches required enormously heavy walls. As a result, Roman buildings were more massive than graceful. When Rome fell, Byzantine architecture, a combination of Roman and Near East influences, developed around Constantinople (now Istanbul). Byzantine architects went far beyond Roman builders in using domes as in Santa Sophia (San ta So fee ah) in Istanbul (slide). Islamic architecture of the East also used many domes Blue Mosque Cairo (slide). As Islam spread across North Africa the Moors developed the horseshoe arch (slide of Mosque at Cordova)

In the Middle Ages the pointed arch of Gothic architecture was developed. It seems, as do the spires of the church, to be pointing heavenward.

Slide of Gothic Church

All of these buildings we have seen have been built with masonry or brick only. As new materials were being developed, such as wrought iron, man began to think of new ways of construction. In 1889 Alexander Eiffel designed a tower of this then new material 984 feet high. It took 26 months to build and was the highest structure in the world for many years. It pointed the way toward newer more slender and delicate forms of architecture to come.

Flat Picture - Eiffel Tower

Today we can see how, by using a modern high strength steel, John Graham's Space Needle of Seattle World's Fair catches the severe and sophisticated grace of a world now literally within grasp of the stars.

Flat Picture - Seattle Space Needle

Sometime next year a shining stainless steel faced arch, its conception as inverted catenary curve 630 feet high will be placed in St. Louis, to commemorate the fact that St. Louis was the gateway to the West. It's new and daring--yet simple. The reason it can be so different is that of the strength of the material from which it is built. Ero Sarenen, its designer, freed the curve of the arch from the prison of the material formerly used to make it. It has the simple lean beauty and strength of steel.

Flat Picture - St. Louis Arch

Follow-up Activities:

(1) We can see that new techniques in engineering and new materials and new skills in using them make new effects possible in architecture. As a result new principles are common to the best 20th century architecture.

   (a) The building materials used and engineering techniques that are followed determine the design.
   (b) Efficiency is the main keynote in planning.
   (c) The keyhold is simplicity and clarity.
   (d) Decoration and pleasing effect grow out of the building as a whole. Good proportion, and imaginative use of the right basic materials, rather than ornament produce the best effect. The use of these principles have given rise to the International Style in architecture.

(2) Have the class bring in pictures of buildings and other structures which they consider meet the above criteria. These may be secured from magazines or newspapers. The teacher should assist in gathering the material for a bulletin board display. Encourage students to comment on the structures in the display.

(3) If nearby construction is in process, the teacher should ask the class to visit the site and report on it.

(4) Perhaps discuss Cantilever Construction

(5) A visit to New York to see these buildings

   . Time Life Building
   . Seagram Building
   . U. N. Building
   . Idlewild Airport
   . Guggenheim Museum
   . Museum of Modern Art

   (An attempt will be made to secure slides and tearsheets on these and other modern architecture.)

(6) Construct designs for a contemporary building of cardboard, plastic or other media.

Project CUE Evaluation Sheet

(Industrial Arts)

Name of Cultural Item: ____________________

Effectiveness: **(Check one)**

____ Excellent ____ Good ____ Fair ____ Poor

Suggestions:

Tear here

Project CUE Evaluation Sheet

(Industrial Arts)

Name of Cultural Item: ____________________

Effectiveness: **(Check one)**

____ Excellent ____ Good ____ Fair ____ Poor

Suggestions:

Tear here

Project CUE Evaluation Sheet

(Industrial Arts)

Name of Cultural Item: ____________________

Effectiveness: **(Check one)**

____ Excellent ____ Good ____ Fair ____ Poor

Suggestions: